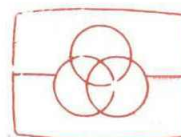


SERVICE MANUAL

BE-4 CHASSIS

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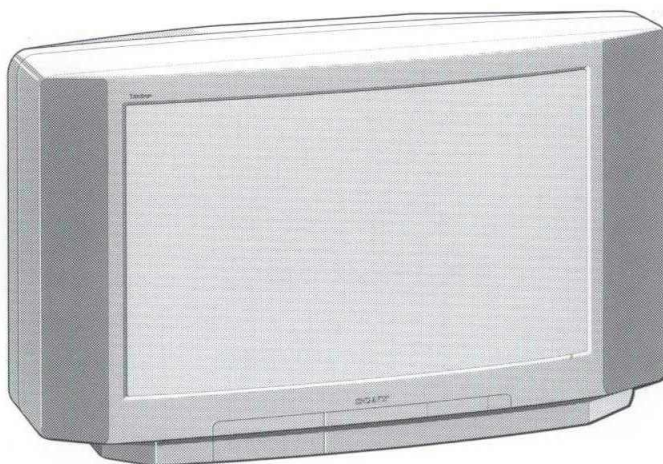
MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-16WT1	RM-836	AEP	SCC-H46C-A	KV-16WT1R	RM-836	OIRT	SCC-H92B-A
KV-16WT1A	RM-836	Italian	SCC-H64C-A	KV-16WT1U	RM-836	UK	SCC-H93A-A
KV-16WT1K	RM-836	OIRT	SCC-H92A-A				



Free service manuals
 Gratis schema's

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TRINITRON® COLOR TV
SONY®

ITEM	MODEL	Television System	Channel Coverage	Colour System
AEP	B/G/H		VHF: E2-E12, S1-S20 UHF: E21-E69, S21-S41	PAL, SECAM NTSC3.58/4.43 (video input only)
Italian	B/G/H		VHF: E2-E12, S1-S20, A-H2 UHF: E21-E69	PAL NTSC3.58/4.43 (video input only)
OIRT	B/G, D/K		B/G VHF: E2-E12 UHF: E21-E69 Hyper: S1-S41 D/K VHF: R1-R12 UHF: R21-R69	PAL, SECAM NTSC3.58/4.43 (video input only)
UK	I		UHF: E21-E69	PAL NTSC3.58/4.43 (video input only)

MODEL	AEP	Italian	OIRT	UK
Power Consumption	37W	37W	37W	52W

SPECIFICATIONS

Picture Tube Hi-Black Trinitron
Approx. 40 cm (16 inches)
(Approx. 36 cm picture measured
diagonally)
86° -deflection

Input/Output Terminals

[INPUTS]

- 21-pin connector (CENELEC standard)
- audio / video input
- RGB input
- Front connectors
- ⊖ Video (phono jack)
- ⊕ Video (phono jack)

[OUTPUTS]

- Ω Headphone jack : minijack (mono)
- Sound output 4W (RMS)
5W (music power)
- Dimensions 475x335x398 mm approx.
- Weight Approx. 11.5kg
- Supplied accessories RM-836 Remote Commander (1)
IEC designated batteries (2)
Aerial (1)
Aerial connector with built-in 300-75
ohm matching transformer (1)
- Other features TELETEXT


[RM-836]

- Remote control system infrared control
- Power requirements 3V dc (2 batteries) R6 (size AA)
- Dimensions Approx. 210x45x24 mm (w/h/d)
- Weight Approx. 90g (Not including batteries)

Design and specifications are subject to change without notice.

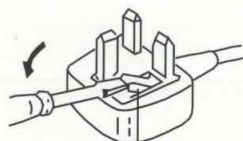
Model name	KV-16WT1	KV-16WT1A	KV-16WT1K KV-16WT1R	KV-16WT1U
Item				
Pal Comb	OFF	OFF	OFF	OFF
PIP	OFF	OFF	OFF	OFF
RGB Priority	ON	ON	ON	ON
Woofer Box	OFF	OFF	OFF	OFF
Scart 1	ON	ON	ON	ON
Scart 2	OFF	OFF	OFF	OFF
Front in (3)	ON	ON	ON	ON
Scart 4	OFF	OFF	OFF	OFF
Projector	OFF	OFF	OFF	OFF
AKB in 16:9 mode	ON	ON	ON	ON
Norm B/G/H	ON	ON	ON	OFF
Norm I	OFF	OFF	OFF	ON
Norm D/K	OFF	OFF	ON	OFF
Norm AUS	OFF	OFF	OFF	OFF
Norm L	OFF	OFF	OFF	OFF
Norm SAT	OFF	OFF	OFF	OFF
Norm M	OFF	OFF	OFF	OFF
Language Preset	German	Italian	OIRT	English

WARNING (KV-16WT1U only)

The flexible mains lead is supplied connected to a **B.S. 1363** fused plug having a fuse of **5 AMP** capacity. Should the fuse need to be replaced, use a **5 AMP FUSE** approved by **ASTA** to **BS 1362**, ie one that carries the  mark.

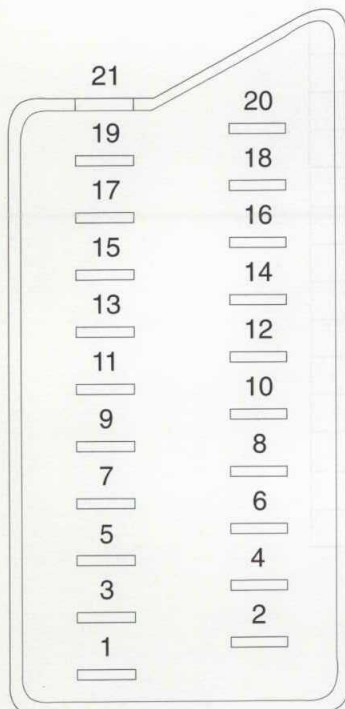
IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR YOUR SOCKET OUTLETS IN YOUR HOME. IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET OUTLET.

When an alternative type of plug is used it should be fitted with a **5 AMP FUSE**, otherwise the circuit should be protected by a **5 AMP FUSE** at the distribution board.



How to replace the fuse.
Open the fuse compartment with the screwdriver blade and replace the fuse.

21 pin connector (0-1)



Pin No		Signal	Signal level
1	○	Audio output B (right)	Standard level: 0.5Vrms Output impedance:less than 1kohm*
2	○	Audio input B (right)	Standard level:0.5Vrms Input impedance:More than 10kohms*
3	○	Audio output A (left)	Standard level:0.5Vrms Output impedance:less than 1kohm*
4	○	Ground (audio)	
5	○	Ground (blue)	
6	○	Audio input A (left)	Standard level:0.5Vrms Input impedance:More than 10kohms*
7	○	Blue input	0.7V±3dB, 75ohms, positive
8	○	Function select (AV control)	High state (9.5—12V):Part mode Low state (0—2V):TV mode Input impedance:More than 10kohms Input capacitance:Less than 2nF
9	○	Ground (green)	
10	○	Open	
11	○	Green	Green signal:0.7V±3dB. 75ohms, positive
12	○	Open	
13	○	Ground(red)	
14	●	Ground (blinking)	
15	○	Red input	0.7V±3dB, 75ohms, positive
	—	(S signal) crom a input	0.3V±3dB, 75ohms, positive
16	○	Blanking input (Ys signal)	High state (1—3V) Low state (0—0.4V) Input impedance:75ohms
17	○	Ground (video output)	
18	○	Ground (video input)	
19	○	Video output	1V±3dB, 75ohms, positive Sync:0.3V(-3, +10dB)
20	○	Video input	1V±3dB, 75ohms, positive Sync:0.3V(-3, +10dB)
	—	Video Input/Y (S signal)	1V±3dB, 75ohms, positive Sync:0.3V(-3, +10dB)
21	○	Common ground (plug, shield)	

○ Connected ● Not Connected (open) * at 20Hz - 20kHz

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CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND, IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION !!

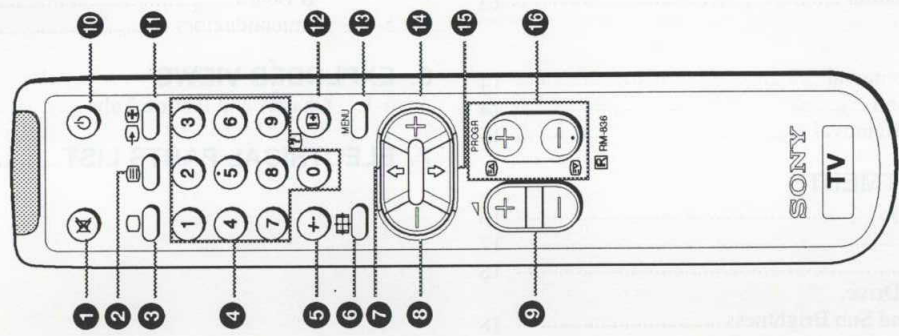
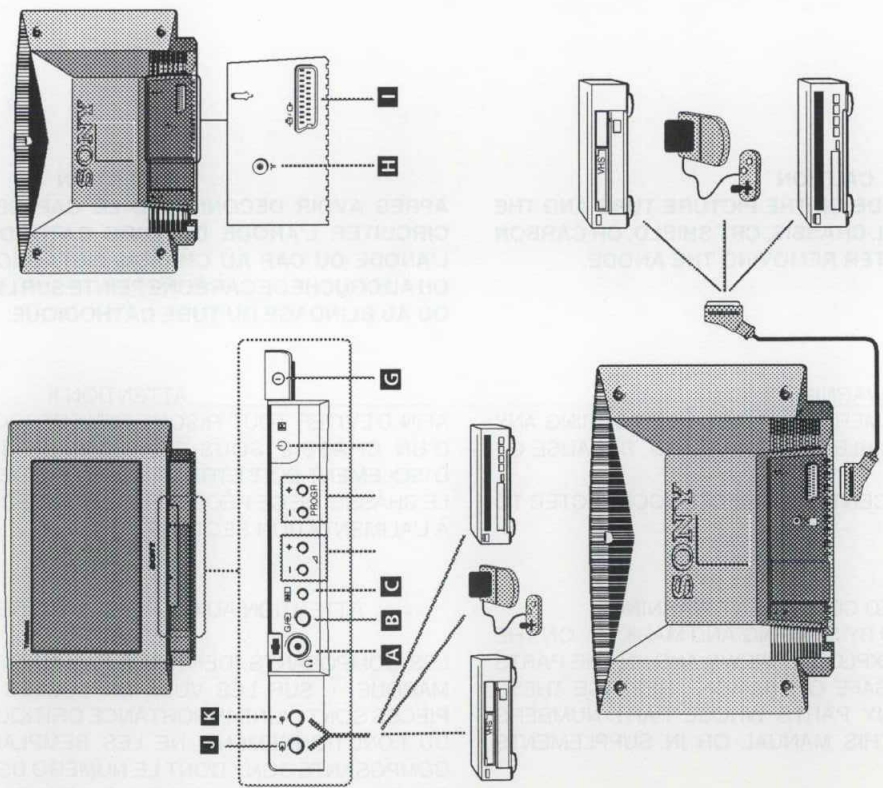
AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE SUR LES VUES EXPLOSÉES ET LES LISTES DE PIÉCES SONT D'UNE IMPORTANCE CRITIQUE PUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.



Getting Started

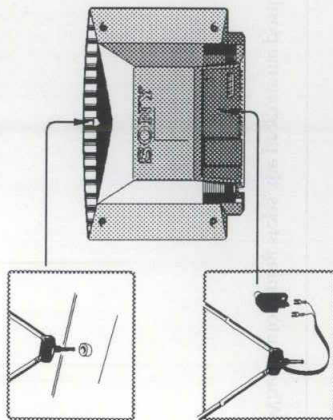
Please open the flap at the front and at the back of the Instruction Manual for illustrations of the TV set and the Remote Commander. Letters in boxes refer to the buttons on the TV set, numbers in circles to the buttons on the Remote Commander.

Step 1

Connecting the Aerial

(If you connect a VCR, skip to step 3).

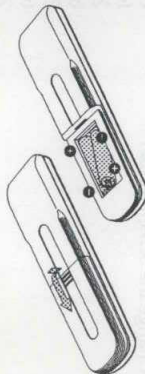
Connect an external aerial to the socket **T**.
Where an external aerial is not available connect the indoor aerial supplied:



- 1** Insert the supplied aerial into the opening on top of the set.
- 2** Loosen the screws of the aerial clips, insert the aerial clips and tighten the screws.
- 3** Connect the aerial to the socket **T** on the rear of the set.
- 4** Adjust the aerial for optimum reception.

Step 2

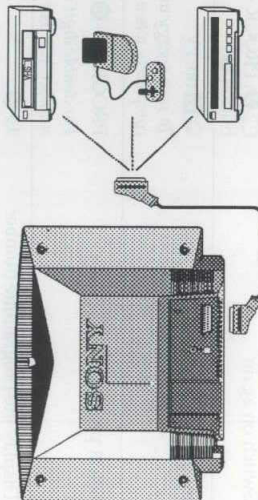
Inserting the Batteries into the Remote Commander



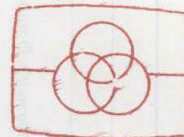
Always remember to dispose of used batteries in an environmental friendly way.

Step 3

Connecting a VCR



We recommend that you tune in the VCR signal to programme number "0". For details see "Presetting Channels Manually" on page 31.



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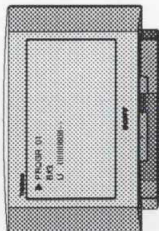
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Step 4

Presetting Channels Automatically

TV searches for all available channels. If manual tuning is preferred see Menu option - Presetting Channels Manually.



- 1 Plug into mains.
Depress power switch **G** on TV set.
- 2 Press and hold **▶▶** **C** on TV set for 2 seconds.
Auto tuning starts and screen shows.

When Auto tuning stops, the programme position 1 is displayed.

TV Operation

TV Operation

This section explains functions used whilst watching TV. Most operations are carried out using the Remote Commander (numbers in circles). All basic functions are also available on the TV set (letters in boxes).

To	Press
Switch on	G on TV
Switch off temporarily	⓪ TV is now in standby mode, ⓪ indicator F on TV lights.
Switch on again	⓪ , PROGR + / - E or any number button 4
Switch off completely	⓪ G on TV To save energy we recommend switching off completely when TV is not in use.
Select programmes	PROGR + / - E or number buttons 4 For double digit numbers press - / - 5 then the number e.g. For 23, press - / - 5 then 2 and 3.
Display the programme number	⓪ 12 Press again to make programme number disappear.
Adjust the volume	◀ / - ⓪ D
Mute the sound	⓪ 1 Press again to restore sound.
View video input	↶ ⓪ E Press again to return to TV programme.
Change the Screen format	Press repeatedly ⓪ 6 to change the screen format as follows: Zoom 1 (imitation of 16:9 for 4:3 broadcasts) → Zoom 2 (imitation of 16:9 for movies broadcast in cinematic format) → Zoom 2 ↑ (whilst in Zoom 2 mode, press the green button to scroll the screen up to show the subtitles. Press the blue button to return to Zoom 2). Zoom 3 (for 16:9 broadcast) → 4:3 (normal 4:3 format).

Teletext Operation

Viewing Teletext

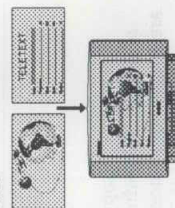
Teletext is an information service broadcast by TV stations.

- 1 Select the channel which carries the teletext service you wish to receive.
- 2 Press **2** to switch on teletext.
- 3 Input three digits for the page number using the programme number buttons **4** or **PROGR +/-** **6 E**.
- 4 Press **3** to switch off teletext.

Teletext errors may occur if the broadcasting signals are weak.

Using Other Teletext Functions

Superimposing teletext on the TV
Press **2** once in teletext mode or twice in TV mode to superimpose teletext on the TV screen.
Press **2** again to cancel superimposing.



Freezing a teletext subpage

Press **1** (HOLD) to freeze the subpage. Freezing the page prevents the information that is displayed from being updated.
Press **1** to cancel HOLD and allow update to continue.

Revealing concealed information (eg: answers to a quiz).

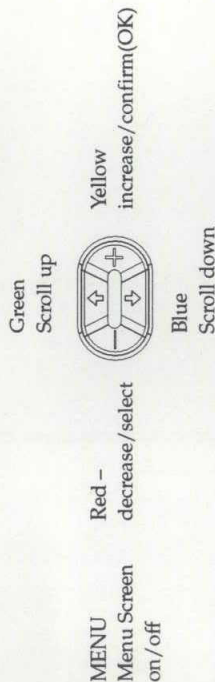
Press **7** to reveal information.
Press again to conceal the information.

Using colour buttons to access pages

When the colour coded menu appears at the bottom of a page, press the colour button (red, green, blue or yellow) **7 7 7 7** to access the corresponding page.

MENU Operation

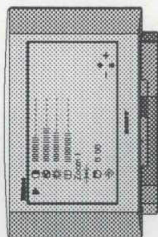
Use buttons on Remote Commander to control Menu screen.



Adjusting the Picture

- 1 Press MENU **1**.
- 2 Press green **7** or blue **15** button to select the item you wish to change.

Symbol	Item	-	Effect	+
1	Picture	Less	More	More
2	Colour	Less	More	More
3	Brightness	Darker	Brighter	Brighter
4	Sharpness	Softer	Sharper	Sharper



- 3 Press red **8** or yellow **14** button to change levels.

- 4 Press MENU **1** to return to normal TV screen.

To reset to factory preset picture levels, press green **7** or blue **15** button to select **3** and press yellow (OK) **15** button.

Changing of the Screen Format

You have the possibility to change the aspect ratio for the TV display for wide screen effects.

- 1 Press MENU **15**.
- 2 Press repeatedly the blue **15** button to select Zoom 1.
- 3 Press the red **8** or yellow **14** button repeatedly to select one of the following effects:
 - Zoom 1: imitation of 16:9 for 4:3 broadcasts.
 - Zoom 2: imitation of 16:9 for movies broadcast in cinematic format.
 - Zoom 2†: when using Zoom 2 mode, part of the top and bottom of the picture are cut off. Using Zoom 2† you can move the picture upwards in order to see the cut-off part of the screen (e.g. to read subtitles).
 - Zoom 3: for 16:9 broadcast.
 - 4:3 for normal 4:3 format.
- 4 Press MENU **15** to return to normal TV screen.

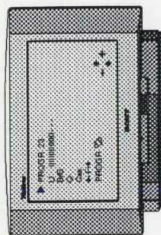
Note: With a RGB source the format 4:3 is not available.

Using the Sleep Timer

The TV may be set to switch to the standby mode automatically after a length of time chosen by you. You may set the time in 30 minutes steps up to 4 hours.

- 1 Press MENU **15**.
- 2 Press green **7** or blue **15** button to select **⏻**
- 3 Press red **8** or yellow **14** button to set time delay.
0.00 (OFF) 0.30 1.00 1.30 4.00
- 4 Press MENU **15** to return to normal TV screen.
When watching TV, press **15** to display time remaining.

Presetting Channels Manually



Up to 60 programme positions are available for presetting channels.

- 1 Press MENU **15**.
- 2 Press green **7** or blue **15** button to select **↔** and press yellow (OK) **14** button.
- 3 Select programme number using PROGR +/- **16** **E** or the number buttons **4**.
- 4 Press green **7** or blue **15** button to select tuning bar and press red **8** or yellow **14** button to start channel search. When a channel is found the tuning bar stops moving and you see the picture.
- 5 If you want to store, press green **7** or blue **15** button to select **◇** and press yellow (OK) **14** button. If you don't want, press red **8** or yellow **14** button to continue search.
- 6 Repeat steps 3 to 5 for all other channels.
- 7 Press MENU **15** to return to normal TV screen.

Skipping Programme Positions

You can skip unused programme positions when selecting channels with the PROG + / - **(6E)** buttons. You can still select them, however, using the number buttons **(4)**.

- 1 Press MENU **(3)**.
- 2 Press green **(7)** or blue **(15)** button to select \rightarrow and press yellow **(14)** button.
- 3 Select programme number you want to skip using PROG + / - **(6E)** button or number buttons **(4)**.
- 4 Press green **(7)** or blue **(15)** button to select Coo and press yellow **(14)** button.
- 5 Press green **(7)** or blue **(15)** button to select \diamond and press yellow **(14)** button to store.
- 6 Repeat steps 3 to 5 for other unused programme positions.
- 7 Press MENU **(3)** to return to normal TV screen.

Fine-Tuning Channels

You can fine tune a stored channel.

- 1 Select the channel you wish to fine tune.
- 2 Press MENU **(3)**.
- 3 Press green **(7)** or blue **(15)** button to select \rightarrow and press yellow **(OK)** **(14)** button.
- 4 Press green **(7)** or blue **(15)** button to select \leftrightarrow F \rightarrow and use red **(6)** or yellow **(14)** button to adjust tuning.
- 5 Press green **(7)** or blue **(15)** button to select \diamond and press yellow **(OK)** **(14)** button to store.
- 6 Press MENU **(3)** to return to normal TV screen.

Optional Connections

Using 21-pin Connector

Your TV has one 21-pin connector **1** on the rear of the set. You can connect optional audio or video equipment to this connector, such as a VCR, video games or a video disc player.

- 1 Press **→** **1** **B** to view the video input signal.
- 2 Press **→** **1** **B** or **□** **3** to return to normal TV operation.

Using the Connectors on the front

Your TV has two connectors (phono jacks) (**→**) video **1**, **→** audio **2** on the front of the set. You can connect e.g. a video game to these connectors.

- 1 Press the yellow **B** button **→** on the TV once to view the input signal in the Zoom 3 mode, twice for 4:3 mode and once again to return to normal TV operation.

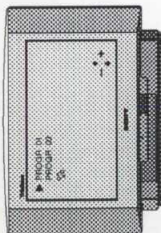
Note: Make sure not to switch on the equipments connected to the 21-pin connector and the front connectors at the same time.

Connecting Headphones

Plug in the headphones to the **→** **A** socket on the front of the TV set. The sound from the speaker is now muted.

Exchanging Programme Positions

After tuning you may wish to rearrange the programme positions.



- 1 Press MENU **3**.
- 2 Press green **7** or blue **15** button to select **→** and press yellow (OK) **4** button.
- 3 Press green **7** or blue **15** button to select **PROGR** **10** and press yellow (OK) **4** button.
- 4 Press red **8** or yellow **14** button to select the first programme position.
- 5 Press the blue **15** button.
- 6 Press the red **8** or yellow **14** button to select the second programme position.
- 7 Press blue **15** button to select **→** and press yellow (OK) **4** button to exchange.
- 8 Repeat steps 4 to 7 for other programme positions.
- 9 Press MENU **3** to return to normal TV screen.

Additional Information

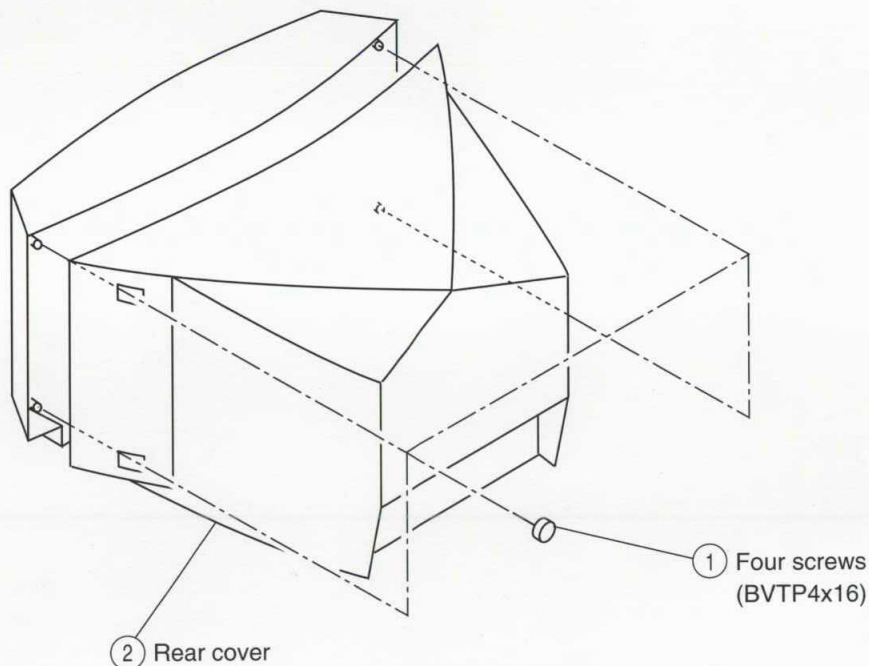
Troubleshooting

Here are some simple solutions to the problems which affect the picture and sound.

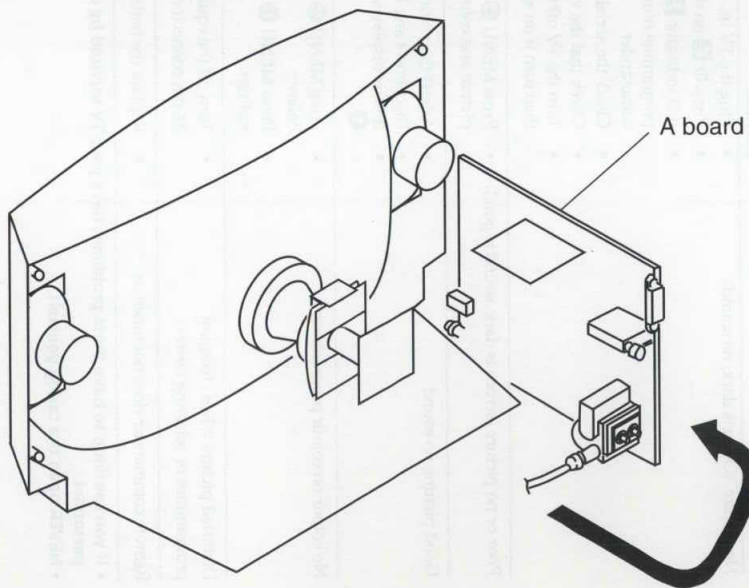
Problem	Solution
No picture, screen is dark, no sound	<ul style="list-style-type: none"> • Plug the TV in. • Press G on the TV. • If F indicator is on press 3 or the programme number 4 on the remote commander. • Check the aerial connection. • Check that the video source is on. • Turn the TV off for 3 or 4 seconds and then turn it on again using G.
Poor or no picture (screen is dark, sound is good)	<ul style="list-style-type: none"> • Press MENU 13 and adjust brightness picture and colour balance level.
Good picture, no sound	<ul style="list-style-type: none"> • Adjust the volume ∇ +/- 9 D. • Disconnect any headphones. • If 13 is displayed on the screen, press 1.
No colour on colour programmes	<ul style="list-style-type: none"> • Press MENU 13 and adjust colour balance. • Press MENU 13 and reset to factory settings.
Distorted picture when changing programmes or selecting teletext	<ul style="list-style-type: none"> • Turn off the equipment connected to the 21-pin connector 1.
Remote commander does not function	<ul style="list-style-type: none"> • Replace the batteries.
<ul style="list-style-type: none"> • If you continue to have these problems, have your TV serviced by qualified personnel. • NEVER open the casing yourself. 	

SECTION 2 DISASSEMBLY

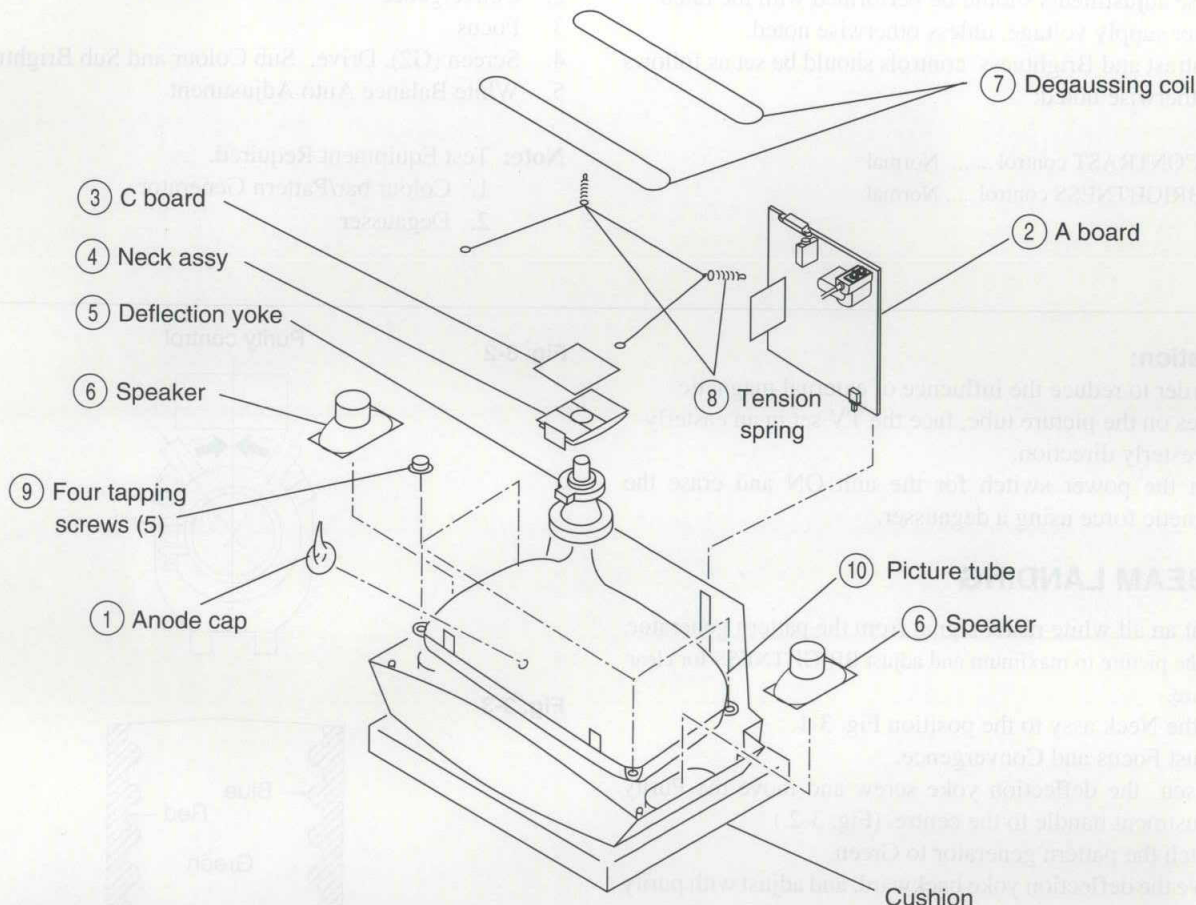
2-1. REAR COVER REMOVAL



2-2. SERVICE POSITION



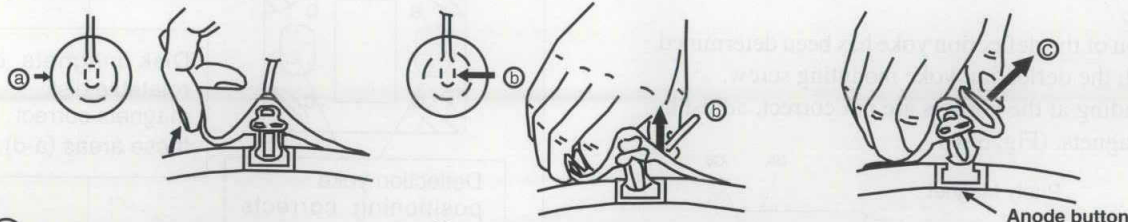
2-3. PICTURE TUBE REMOVAL



• REMOVAL OF ANODE-CAP

Note: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

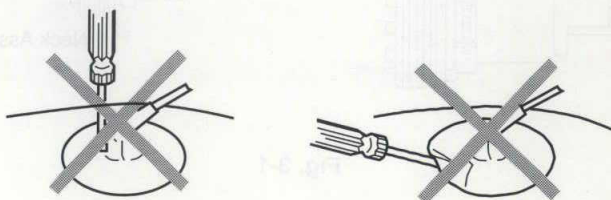
* REMOVING PROCEDURES.



- ① Turn up one side of the rubber cap in the direction indicated by the arrow (a)
- ② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow (b)
- ③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow (c)

• HOW TO HANDLE AN ANODE-CAP

- ① Don't damage the surface of anode-cap with sharp shaped material !
- ② Don't press the rubber hardly not to hurt inside of anode-caps !
A metal fitting called as shatter-hook terminal is built into the rubber.
- ③ Don't turn the foot of rubber over hardly !
The shatter-hook terminal will stick out or damage the rubber.



SECTION 3 SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with the rated power supply voltage, unless otherwise noted.

The Contrast and Brightness controls should be set as follows unless otherwise noted:

- CONTRAST control Normal
- ⊛ BRIGHTNESS control Normal

Perform the adjustments in the following order:

1. Beam Landing
2. Convergence
3. Focus
4. Screen (G2), Drive, Sub Colour and Sub Brightness.
5. White Balance Auto Adjustment

Note: Test Equipment Required.

1. Colour bar/Pattern Generator
2. Degausser

Preparation:

- In order to reduce the influence of external magnetic forces on the picture tube, face the TV set in an easterly or westerly direction.
- Turn the power switch for the unit ON and erase the magnetic force using a degausser.

3-1. BEAM LANDING

1. Input an all white raster signal from the pattern generator. Set the picture to maximum and adjust BRIGHTNESS for clear picture.
2. Set the Neck Assy to the position Fig. 3-1.
3. Adjust Focus and Convergence.
4. Loosen the deflection yoke screw and move the Purity Adjustment handle to the centre. (Fig. 3-2.)
5. Switch the pattern generator to Green.
6. Move the deflection yoke backward, and adjust with purity control so that Green is at the center and Blue and Red are evenly spaced at the side. (Fig. 3-3.)
7. Move the deflection yoke forward, and adjust so the entire screen becomes Green.
8. Switch the pattern generator to Red and Blue, and confirm the condition.
9. When position of the deflection yoke has been determined, tighten it with the deflection yoke mounting screw.
10. When the landing at the corners are not correct, adjust by using disk magnets. (Fig. 3-4.)

Fig. 3-2

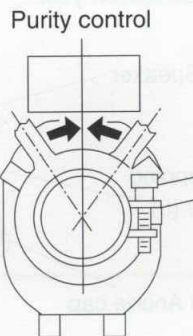


Fig. 3-3

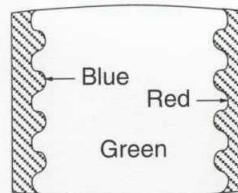


Fig. 3-4

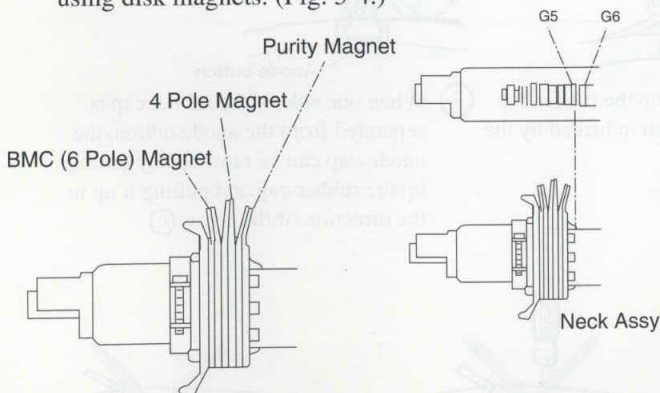
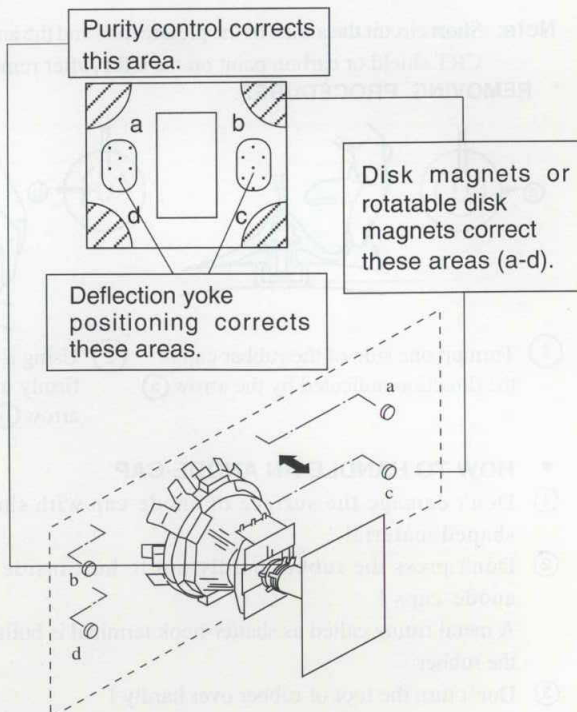


Fig. 3-1

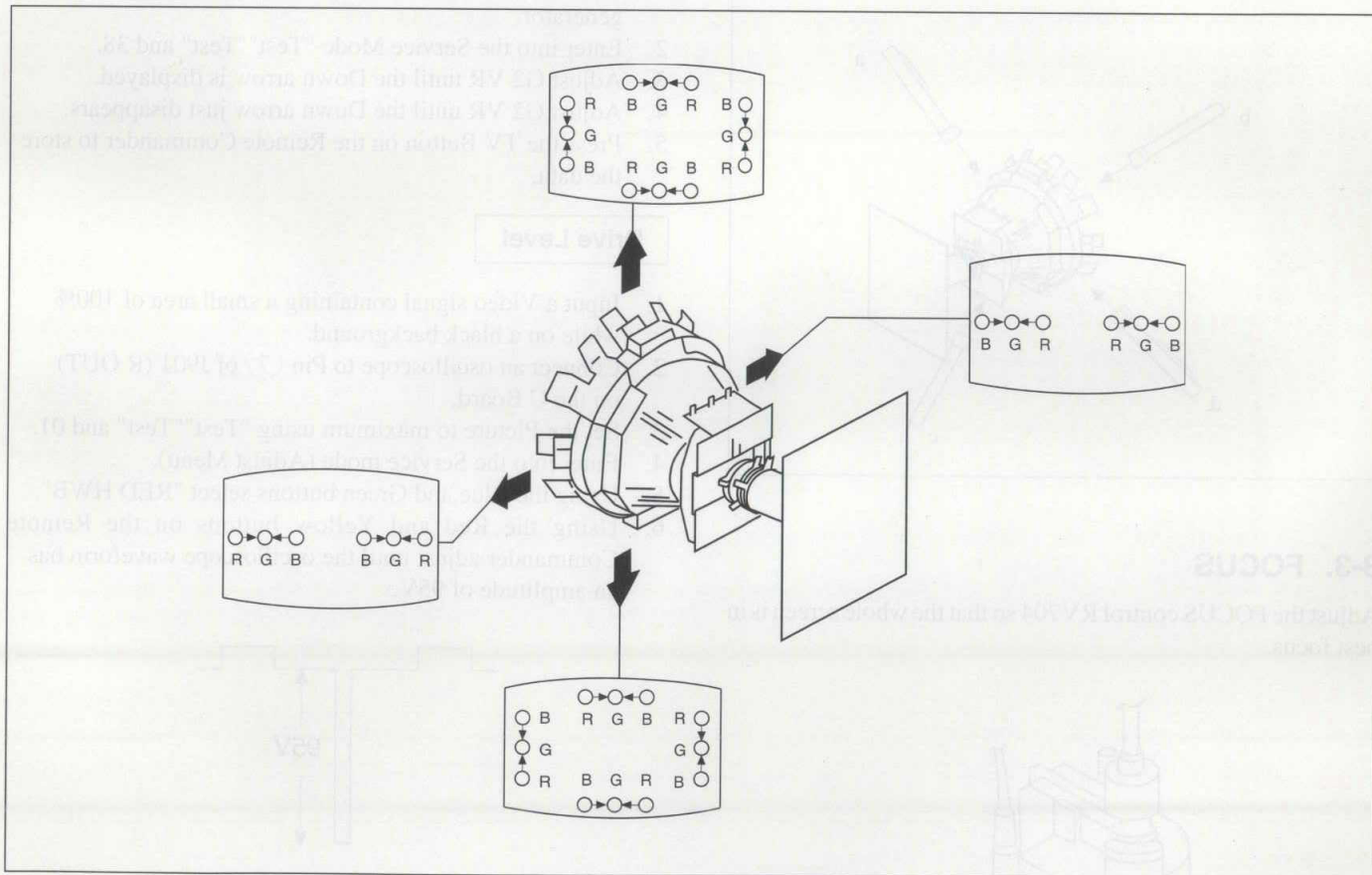
3-2. CONVERGENCE

(1) Static Convergence

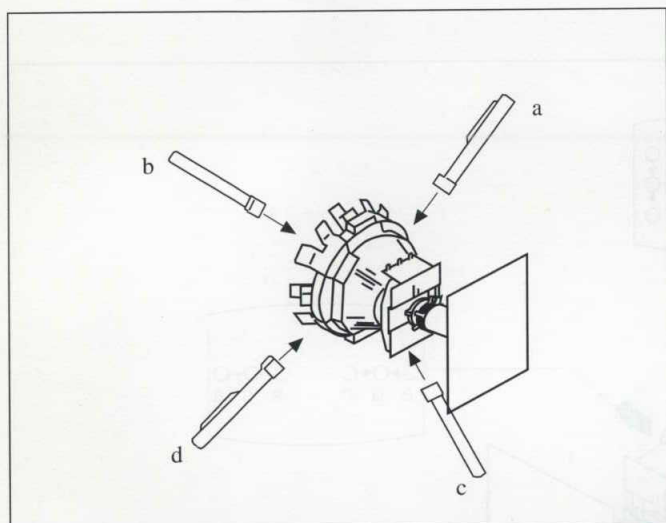
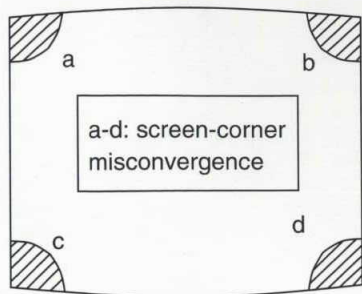
1. Input a dot pattern from the pattern generator and adjust the picture to normal.
2. Loosen the magnet stopper.
3. Adjust the red and blue dots using the pole magnet.
4. Converge the red and blue dots to the green dots using the 6 pole magnet.
5. Fasten the magnet stopper.

(2) Corner Convergence Adjustment

1. If the sides of the screen are misconverged then adjust by tilting the deflection yoke up, down or in the left or right direction.
2. Once the correct position has been determined secure the deflection yoke using the wedges.

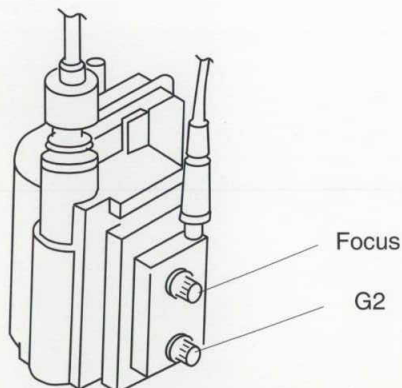


(3) Screen-corner Convergence.

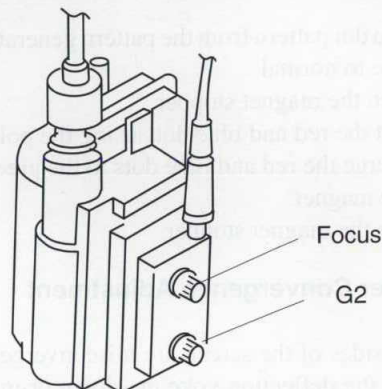


3-3. FOCUS

Adjust the FOCUS control RV704 so that the whole screen is in best focus.



3-4. SCREEN (G2), DRIVE, SUB COLOUR and SUB BRIGHTNESS.

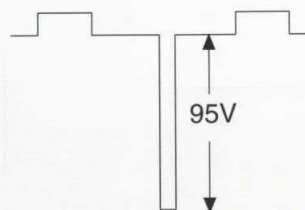


Screen (G2) setting

1. Input a 0 IRE (Black Level) signal from the pattern generator.
2. Enter into the Service Mode "Test""Test" and 38.
3. Adjust G2 VR until the Down arrow is displayed.
4. Adjust G2 VR until the Down arrow just disappears.
5. Press the TV Button on the Remote Commander to store the data.

Drive Level

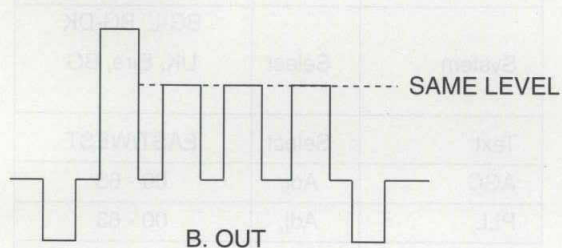
1. Input a Video signal containing a small area of 100% white on a black background.
2. Connect an oscilloscope to Pin ⑦ of J901 (R OUT) on the C Board.
3. Set the Picture to maximum using "Test""Test" and 01.
4. Enter into the Service mode (Adjust Menu).
5. Using the Blue and Green buttons select "RED HWB".
6. Using the Red and Yellow buttons on the Remote Commander adjust until the oscilloscope waveform has an amplitude of 95V.



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Sub Colour Adjustment

1. Input a PAL colour bar pattern from the pattern generator.
2. Connect an oscilloscope to Pin ③ of J901 (B OUT) on the C Board.
3. Enter into the Service Mode "Test""Test" and 22.
4. Using the Red and Yellow buttons on the Remote Commander adjust until the oscilloscope waveform becomes as follows :



Note : If the TV is able to receive PAL and SECAM transmissions, repeat the above procedure using a Secam colour bar signal.

Sub Brightness Adjustment

1. Input a Philips pattern from the pattern generator.
2. Enter into the Service Mode "Test""Test" and 23.
3. Using the Red and Yellow buttons on the Remote Commander adjust until the 0 IRE of the grey scale and the cut off are only slightly visible on the screen.

3-5. WHITE BALANCE AUTO ADJUSTMENT

1. Enter into the Service Mode using the remote commander.
2. Adjust the brightness and contrast levels to normal.
3. Using the service mode menu set the R OUT, G OUT and B OUT data to "OFF".
4. Apply 165V±0.3V volts DC from an external power supply to the R, G, and B cathodes.
5. Adjust the G2 VR until the flyback line just disappears.
6. Remove the DC power supply and from the menu set the R OUT, G OUT and B OUT data to "ON".



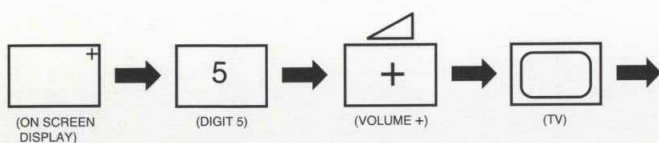
SECTION 4 CIRCUIT ADJUSTMENTS

4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied Remote Control Commander RM-836.

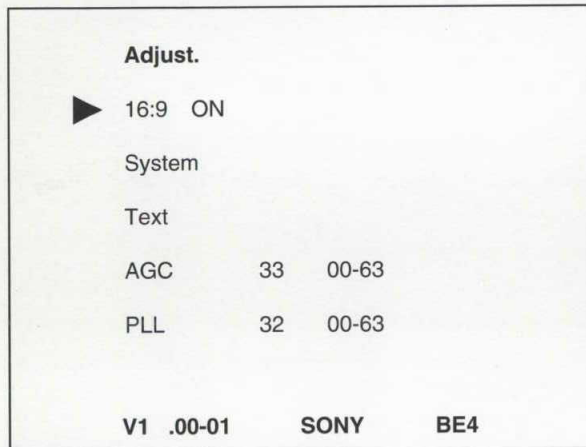
HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power of the set and enter into stand-by mode.
2. Press the following sequence of buttons on the Remote Control Commander.



"TT-- " will appear in the top right corner of the screen
Other status information will also be displayed.

3. Press the MENU button on the Remote Commander to obtain the menu on the screen.



Software version

4. Press the Blue (Next) or Green (previous) buttons to select the adjustment item from the table.
5. Press the Yellow (+) or Red (-) buttons to change the data as required.
6. Turn off the power to quit the service mode when adjustments are completed.

Range of adjustments available from the on screen menu system.

Adjustment	Set	Range
16:9 Off	Select	ON/OFF
System	Select	BG-L, BG-DK UK, Eire, BG
Text	Select	EAST/WEST
AGC	Adj.	00 - 63
PLL	Adj.	00 - 63
B&W Delay	Adj.	00 - 63
Ver Size	Adj.	00 - 63
Ver, Breath	00	00 - 63
Par, Ampl	00	00 - 63
Par, Tilt	32	00 - 63
V, Linear	Adj.	00 - 63
Corn, corr	00	00 - 63
V, Cen or EW	Adj.	00 - 63
V, Position	42	00 - 63
H, Centre	Adj.	00 - 63
Blue HWB	Adj.	00 - 63
Green HWB	Adj.	00 - 63
Red HWB	Adj.	00 - 63

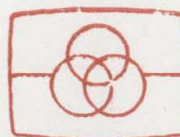
4-2. TEST MODE 2:

TT -- Mode is available by pressing the Test button twice, O.S.D 'TT --' appears. The functions described below are available by pressing two digits. To release the 'TT --' mode, press 0 twice, press 'TEST' , press 'TV' or switch the TV into Stand-by mode.

00	Switch 'TT--' Mode off.
01	Set picture level to maximum.
02	Set picture level to minimum.
03	Set volume to 35%.
04	Set volume to 50%.
05	Set volume to 65%.
06	Set volume to 80%.
07	Ageing condition (picture max., brightness max.).
08	Shipping condition (Analog values are RESET to factory setting, Prog 1 is selected, TT--mode switched off, Vol = 35%).
09	Dummy.
10	No function.
11	Dummy
12	Text Picture Level Offset (Enable/Disable)
13	Select Odd / Even field for Non-interlaced teletext.
14	Select Interlaced / Non-interlaced teletext display.
15	Read factory setting from ROM to NVM - Reads Volume, Brightness, Picture, Hue, Sharpness and Colour values from ROM to the actual used values (Last Power Memory).
16	No function
17	Enable / Disable Sharpness Operation.
18	Enable / Disable Teletext Operation.
19	Enable / Disable NTSC Operation.
20	No function.
21	Sub Picture.
22	Sub Colour (Pal / Secam Different Stores)
23	Sub Brightness.
24	Destination System BG/L.

25	Destination Systems BG/L.
26	Destination Systems I.
27	Destination System I/I'.
28	Destination BG only.
29	Dummy.
30	No function.
31-32	Dummy.
33	Auto AGC Adjust.
34	Auto PLL Adjust.
35-37	Dummy.
38	Enter G2 adjustment mode.
39	Dummy.
40	No function.
41	Re-initialise NVM.
42	Dummy.
43	Re-initialise Geometry settings.
44-47	Dummy
48	Set NVM testbyte to 44h in NVM.
49	Erase NVM testbyte
50	No function.

Note : For Test Modes 41 - 50, it is necessary to ensure that the TV is set to Prog 59.



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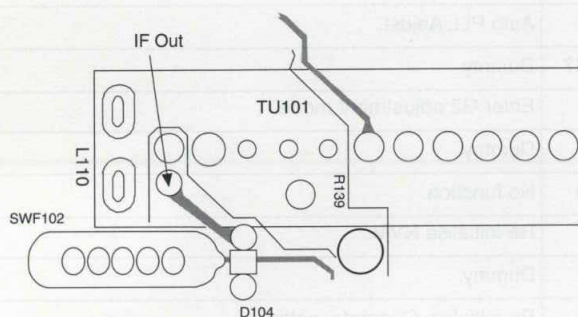
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IF ADJUSTMENT (AUTOMATIC)

1. Input a 38.9 MHz 100dBμ CW signal at the IF Out injection point.
2. Enter into service mode and press 34.
3. Connect a digital voltmeter to IC101 pin (23).
4. Check AFT 2.5V ±0.3V dc.
5. Press '00' on the Remote Commander.

SYSTEM L ADJUSTMENT (French Models)

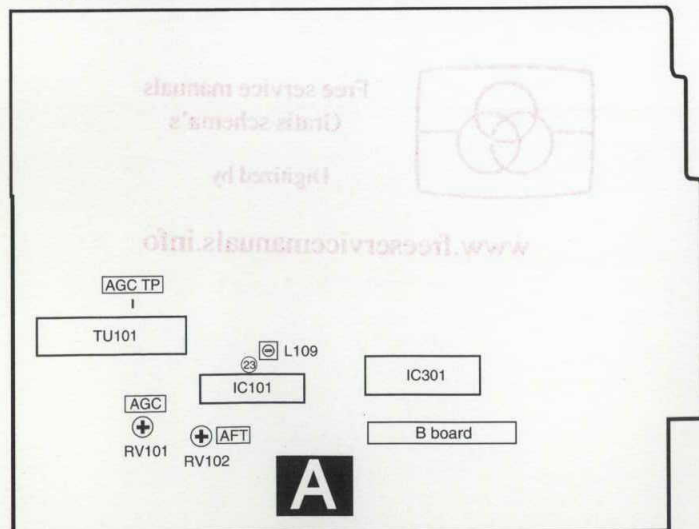
1. Input a 33.9MHz 100dBμ CW signal at the IF Out injection point.
2. From the On Screen Menu set System to L band 1.
3. Connect a digital voltmeter to IC101 pin (23).
4. Adjust RV102 AFT for 2.5V ±0.3V dc.



- A Board Print Side -

AGC ADJUSTMENT

1. Receive an off-air signal.
2. Enter into the Service adjust menu and select AGC.
3. Adjust the data using the Red and Yellow buttons on the Remote Commander so that there is no snow or cross - modulation visible on the screen.
4. Change the receiving off-air channel, and confirm the above status.



- A Board Component Side -

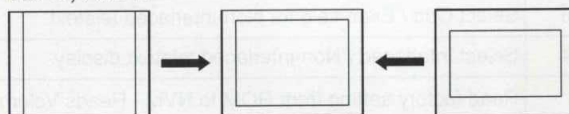
DEFLECTION SYSTEM ADJUSTMENT

1. Enter into the service mode.
2. Using the Blue or Green buttons select the Adjust item.
3. Press the Yellow button to enter the adjustment submenu.
4. Select and adjust each item in order to obtain the optimum image.

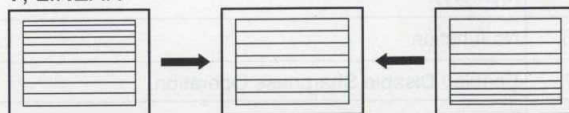
See Note on page 23

Adjustment	Set	Range
VERT, AMPL	Adj.	00 - 63
VER, BREATH	00	00 - 63
PAR, AMPL	00	00 - 63
PAR, TILT	32	00 - 63
V, LINEAR	Adj.	00 - 63
CORN, CORR	Adj.	00 - 63
V, CENTRE	Adj.	00 - 63
V, POSITION	42	00 - 63
H, CENTRE	Adj.	00 - 63

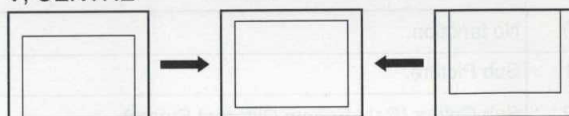
VERT, AMPL



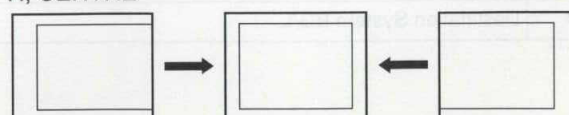
V, LINEAR



V, CENTRE

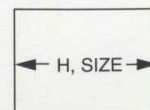


H, CENTRE



H, SIZE

RV802



Fit the link as required to obtain the correct horizontal picture size. Remove the link if the H, SIZE is to large.

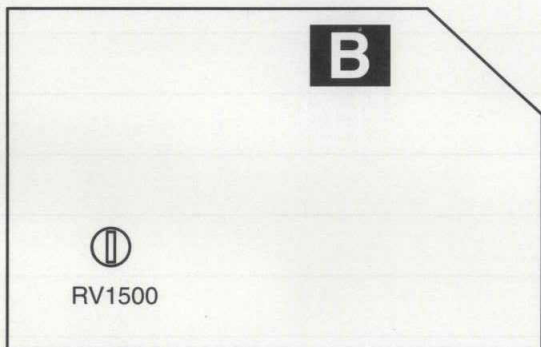
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VERTICAL OVERSCAN BLANKING ADJUSTMENT

1. Receive an Off-Air signal.
2. Enter into menu and select zoom3. (zoom mode)
3. Enter into the service mode.
4. Using the Blue or Green buttons select Vert. Amp (V-size). Take note of the actual value and reduce it as indicated below.



5. Adjust RV1500 on B-board to obtain the same video blanking area at the top and bottom of the screen.
6. Readjust the Vert.Amp (V-size) increasing it to the original setting.



- B Board Component Side -

Note : Deflection System Adjustments should not be carried out whilst using an NTSC (60Hz) signal, or if the signal is unlocked.

4-3. BE-4 SELF DIAGNOSTIC SOFTWARE

The identification of errors within the BE-4 chassis is triggered in 1 of 2 ways :- 1: Bus busy or 2: Device failure to respond to I²C.

In the event of one of these situations arising the software will first try to release the Bus if busy (Failure to do so will report with a continuous flashing LED) and then communicate with each relevant device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the LED by a Series of flashes which must be counted (See Table 1),. Non fatal errors are reported with this method.

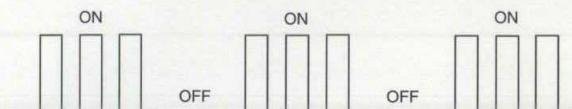
If a fatal error is found, the set will simply stay in whichever state it was when the error occurred, but if a non fatal error occurs the set will try to continue to operate.

Table 1

No of Flashes	Meaning
2	IC301 not acknowledging I ² C transmission, NVM OK.
3	IC301 FAULT (Not OK) - flags
4	IC301 - No H Flyback
5	IC301 - Stack Overflow.
6	Overvoltage / Overcurrent Protection (Pin 52) high.
7	IC002 not acknowledging I ² C transmission, IC301 OK.
8	IC002 and IC301 - No I ² C acknowledgment.
9	General I ² C Error (SDA or SCL being held low) (IC301, IC001, IC002, CN001)

Flash Timing Example : e.g. error number 3

Stby LED



MEMO

VERTICAL OVERSCAN BLANKING ADJUSTMENT

The identification of error within the BE-4 class is reported in 1 of 2 ways - 1. For busy (E2) devices respond to 'C' in the case of these conditions during the software will first try to restore the BE-4 busy condition to do an will then try to restore the BE-4 busy condition to do an region with a continuous flashing (E2) and then communicate with each channel device in turn to establish if a device is faulty. If a device is found to be faulty the program data set will be changed through the E2 by a series of flashes which must be coded 'Sec 1' table 1. If a fault error is reported with a device...

Adjust RV1500 on B-board to obtain the same video-blanking area at the top and bottom of the screen. (Reset) the 7 pin Analog Video connector to the original setting.

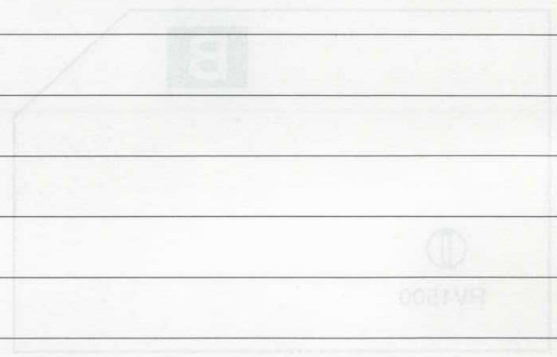
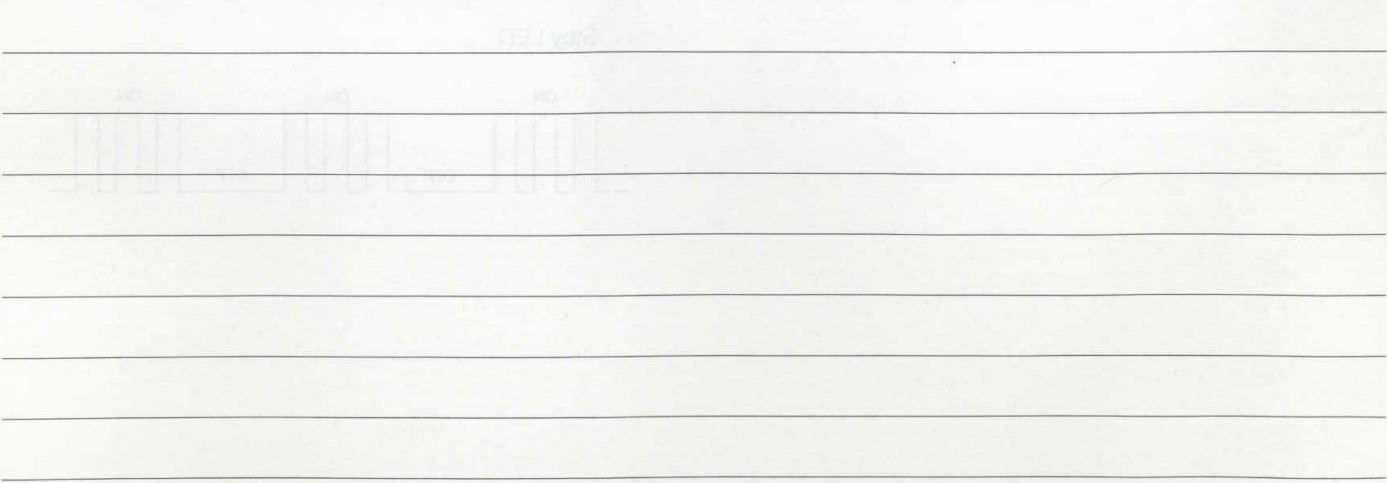


Table 1

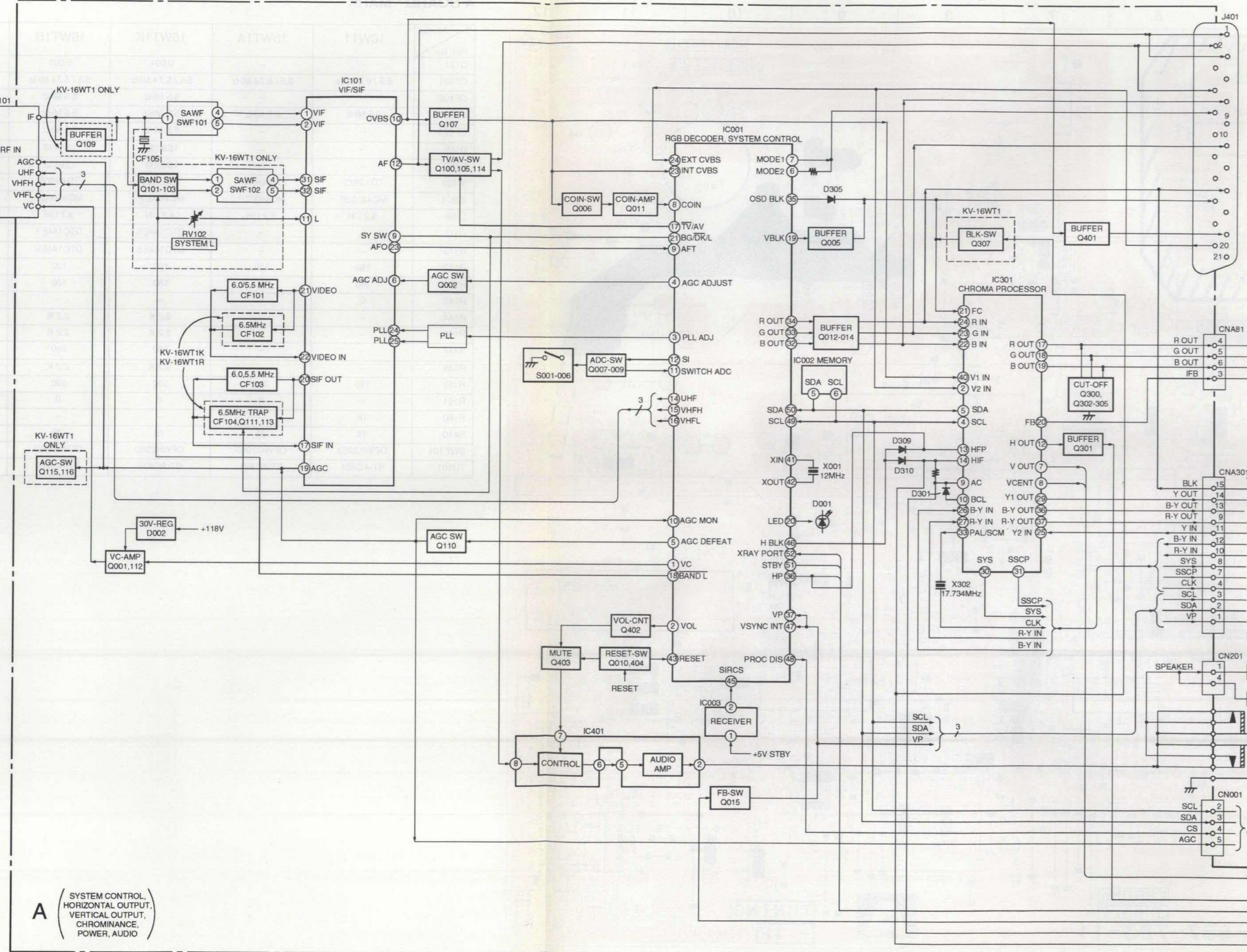
Learning	No of flashes
Light for service signal (E2) - 10 flashes	1
Count Error - 10 flashes	2
IC 801 - 10 flashes	3
IC 801 - Blank Overflow	4
Overwrite / Overwrite Protection (E2) high	5
IC 801 not addressed / IC 801 not addressed	6
IC 801 not addressed - No E2 programming	7
IC 801 not addressed - No E2 programming	8

Flash Timing Example - e.g. error number 3

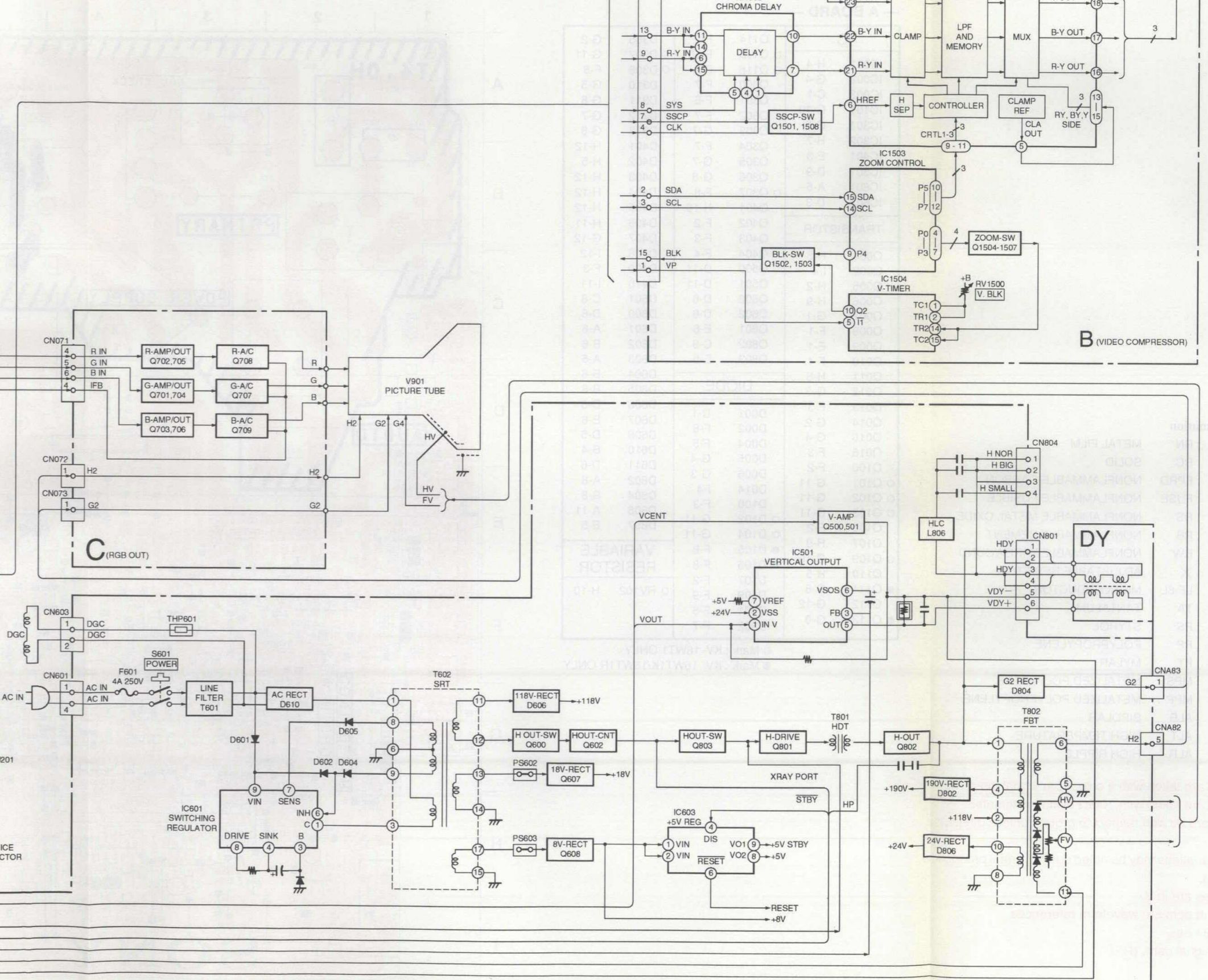


SECTION 5 DIAGRAMS

5-1. BLOCK DIAGRAM



A (SYSTEM CONTROL, HORIZONTAL OUTPUT, VERTICAL OUTPUT, CHROMINANCE, POWER, AUDIO)

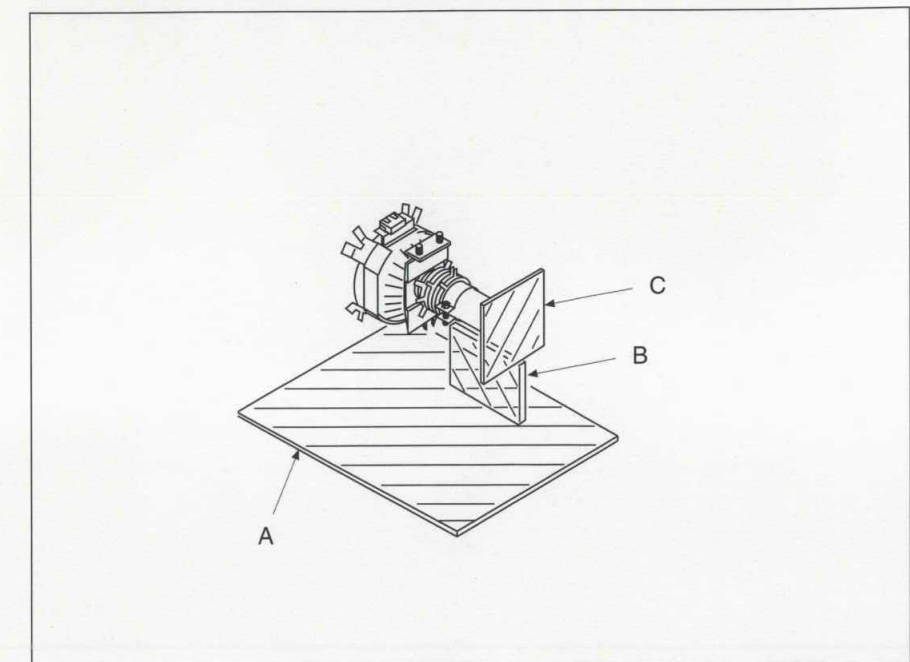


B (VIDEO COMPRESSOR)

C (RGB OUT)

KV-16WT1 KV-16WT1

5-2. CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

- Note: All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytic and tantalums. All resistors are in ohms. kΩ = 1000Ω, MΩ = 1000KΩ. Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5 mm Rating electrical power 1/4 W

- ▨ : nonflammable resistor. ▴ : internal component. □ : panel designation, or adjustment for repair. All variable and adjustable resistors have characteristic curve B, unless otherwise noted. ⊥ : earth - ground. ⊕ : earth - chassis. # : no mounted.

Note: The components identified by shading and marked with a triangle are critical for safety. Replace only with the part number specified.

Note: Les composants identifiés par une trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Reference information table listing resistor types (RC, FPRD, RS, RB, RW, etc.), diode types (D001, D002, etc.), and capacitor types (TA, PS, PP, etc.) with their corresponding material or characteristic.

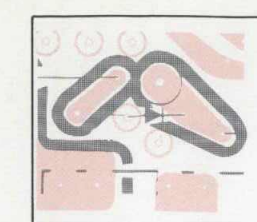
- Readings are taken with a colour-bar signal input. Readings are taken with 10MΩ digital multimeter. Voltages are dc with respect to ground unless otherwise noted. Voltage variations may be noted due to normal production tolerances. All voltages are in V. Circled numbers are waveform references. — : B+ bus. — : signal path. (RF)

A SYSTEM CONTROL, HORIZONTAL OUTPUT, VERTICAL OUTPUT, CHROMINANCE, POWER, AUDIO

- A BOARD -

Component list table for 'A BOARD' including ICs (Q114, Q115, Q300, etc.), Transistors (Q001, Q002, etc.), Diodes (D001, D002, etc.), and Variable Resistors (RV102).

○ Mark : KV-16WT1 ONLY ● Mark : KV-16WT1K/16WT1R ONLY

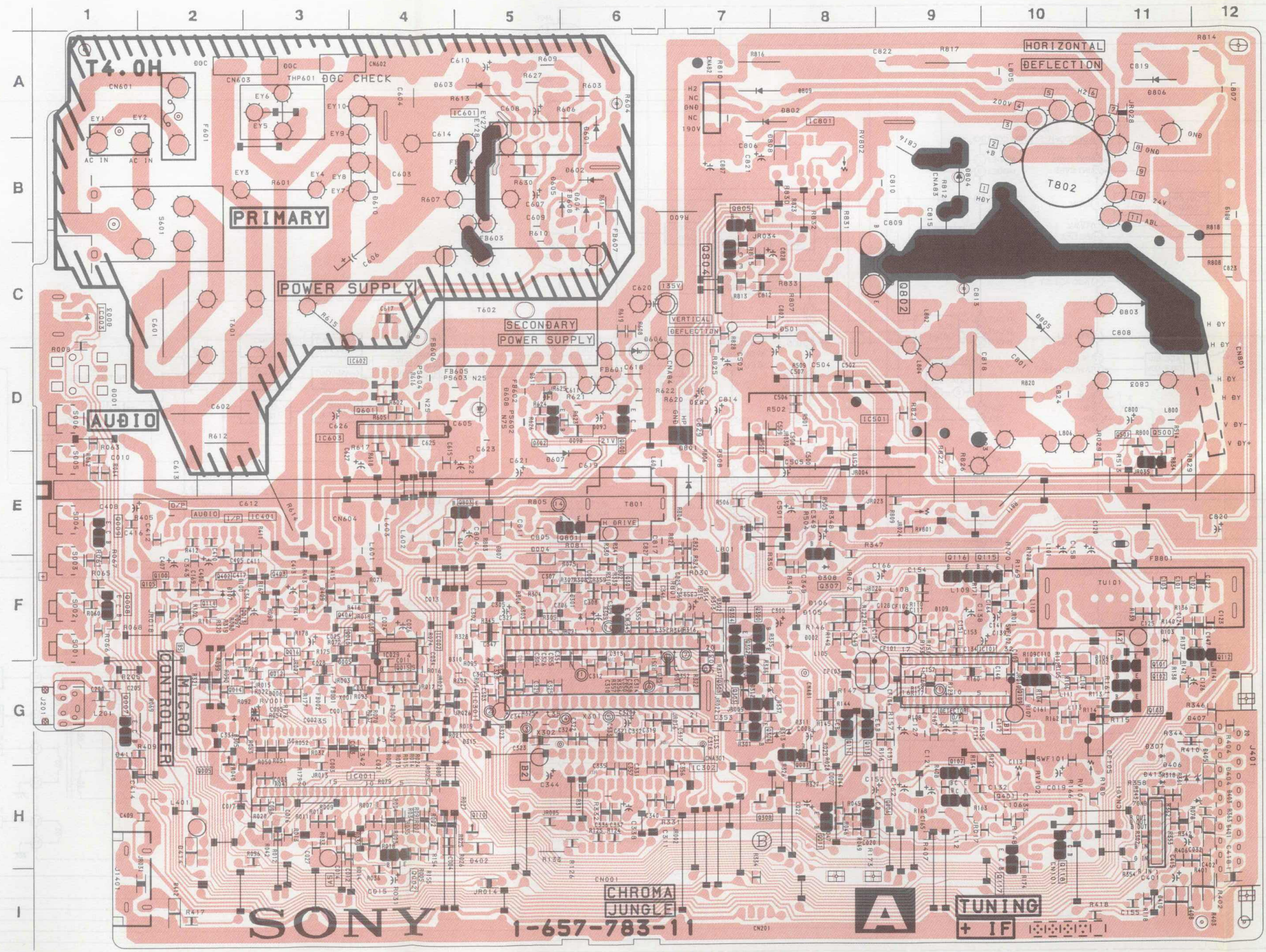


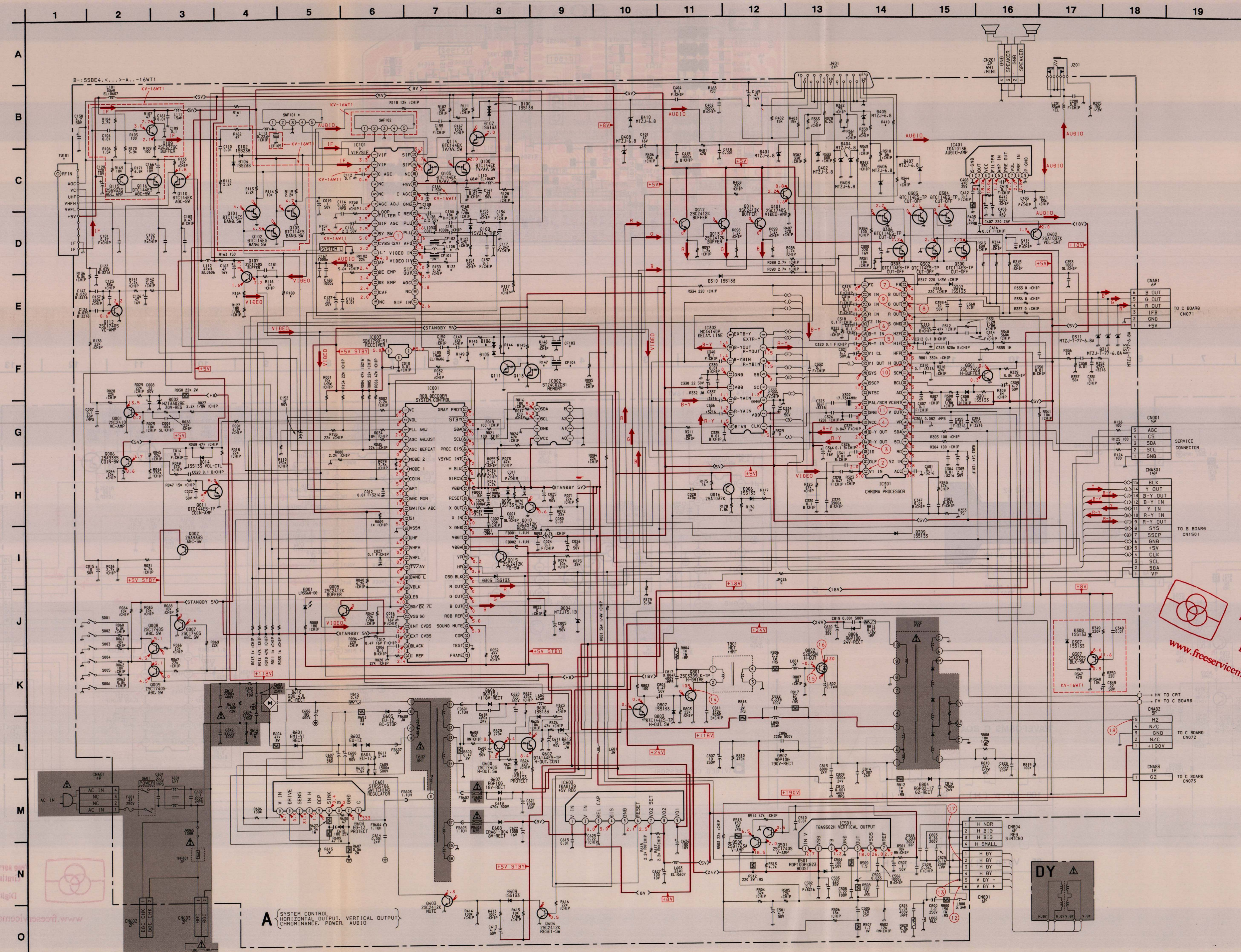
NOTE: The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

KV-16WT1 KV-16WT1

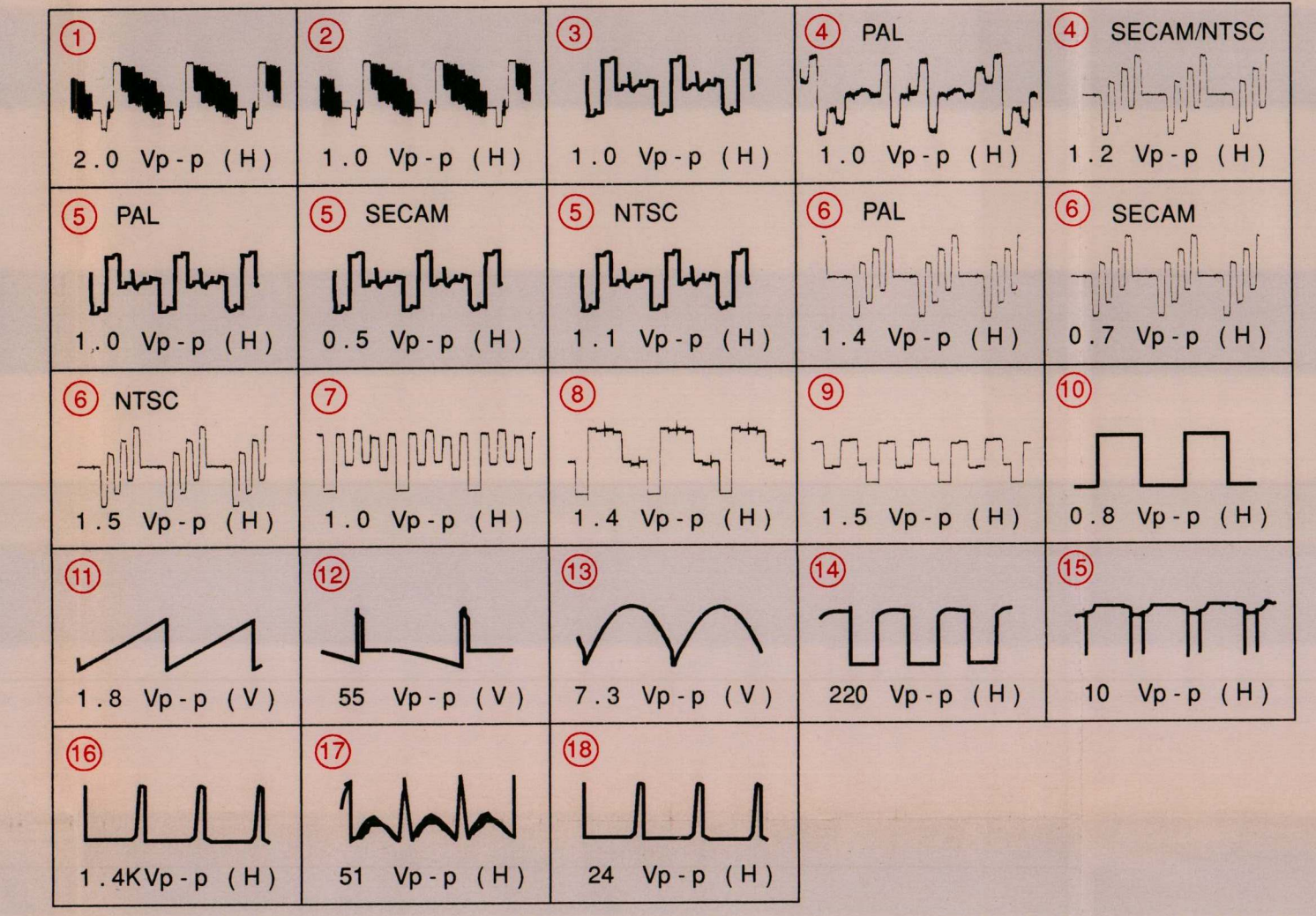
A BOARD * MARK

Table mapping component reference numbers to their specifications for models 16WT1, 16WT1A, 16WT1K, 16WT1R, and 16WT1U.

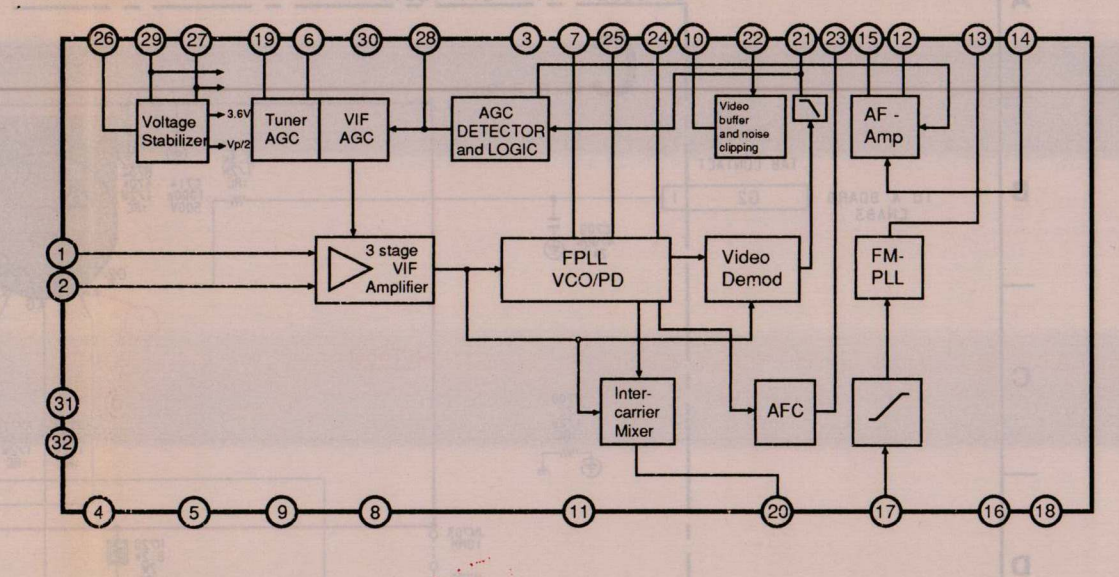




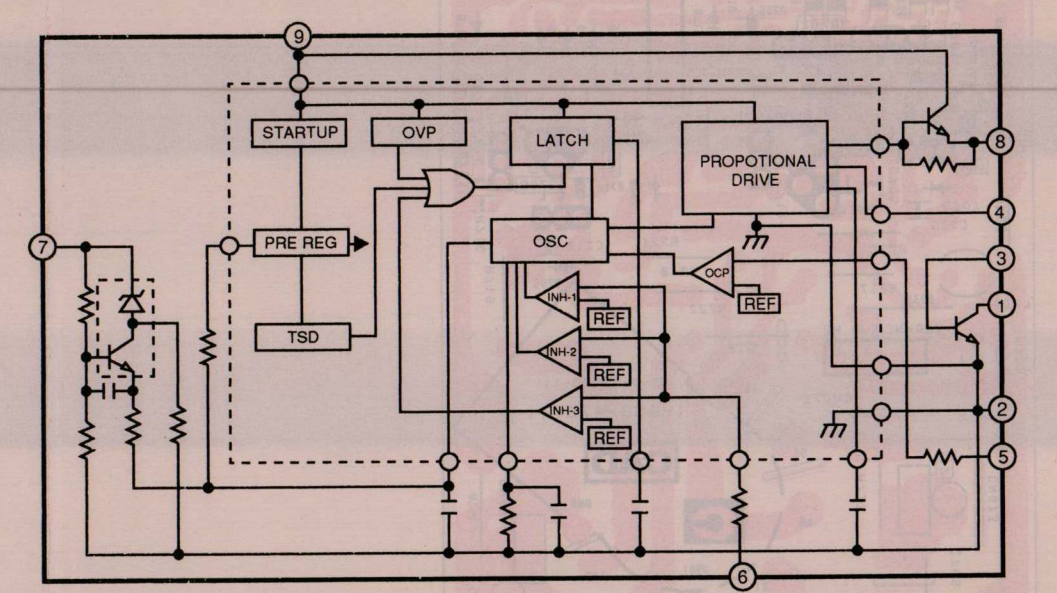
WAVEFORMS A BOARD



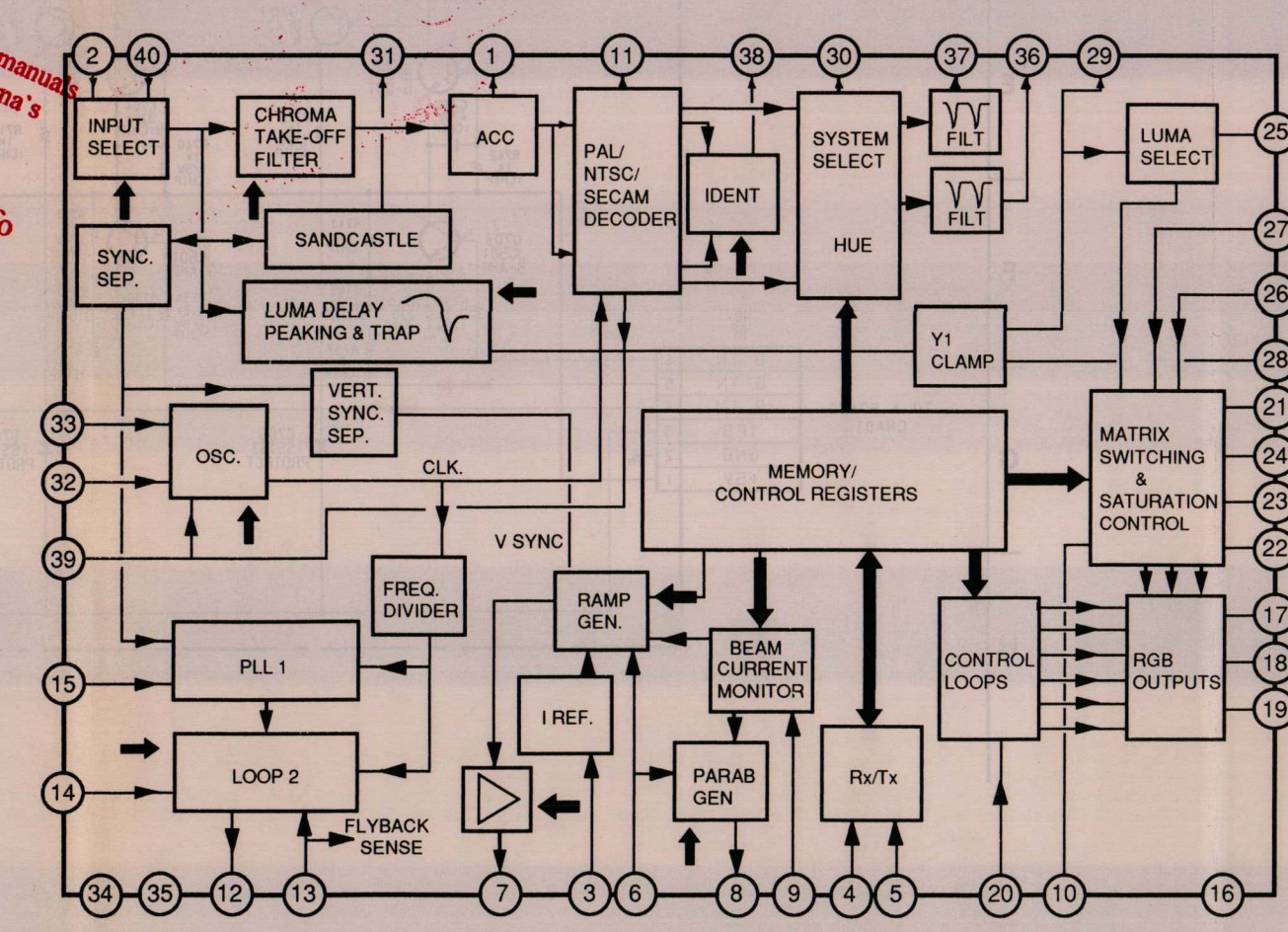
A BOARD IC101 TDA9806/TDA9812



A BOARD IC601 STRS5706



A BOARD IC301 MC44002P/MC44007P

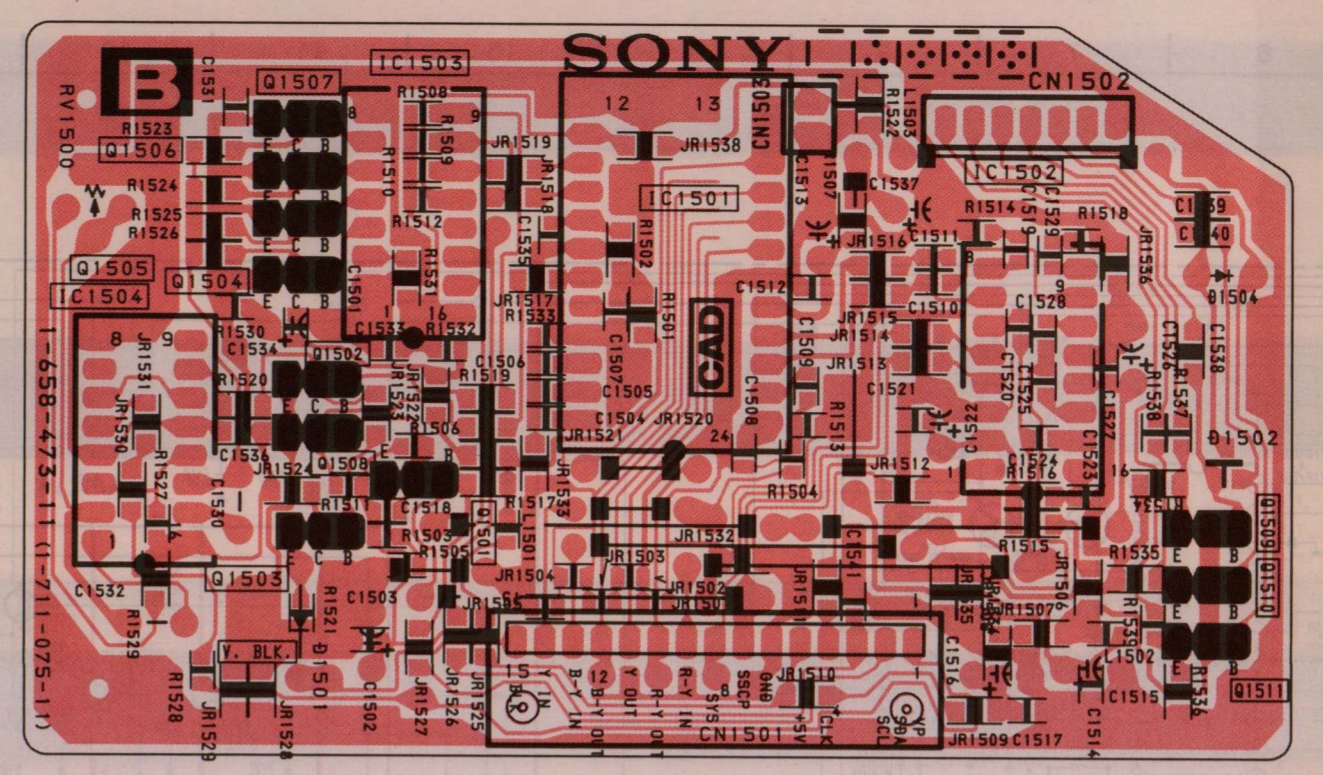


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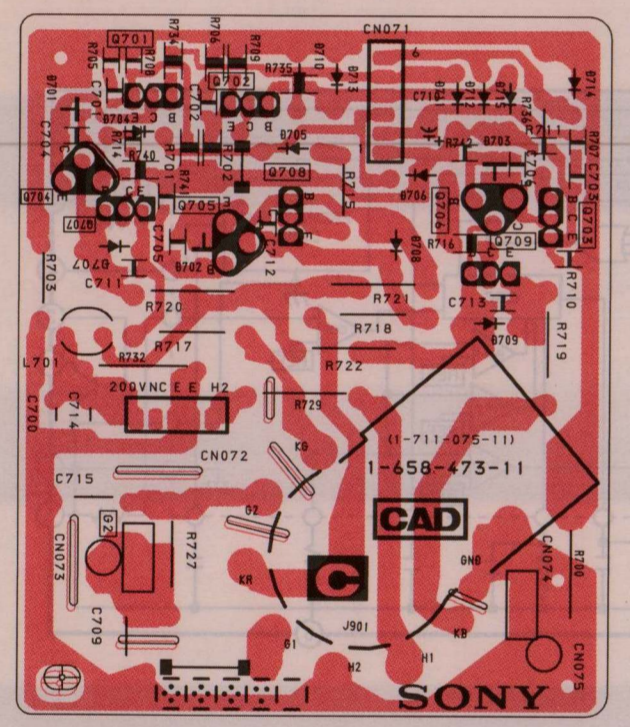
A SYSTEM CONTROL
 HORIZONTAL OUTPUT, VERTICAL OUTPUT
 CHROMINANCE, POWER, AUDIO

- B BOARD -

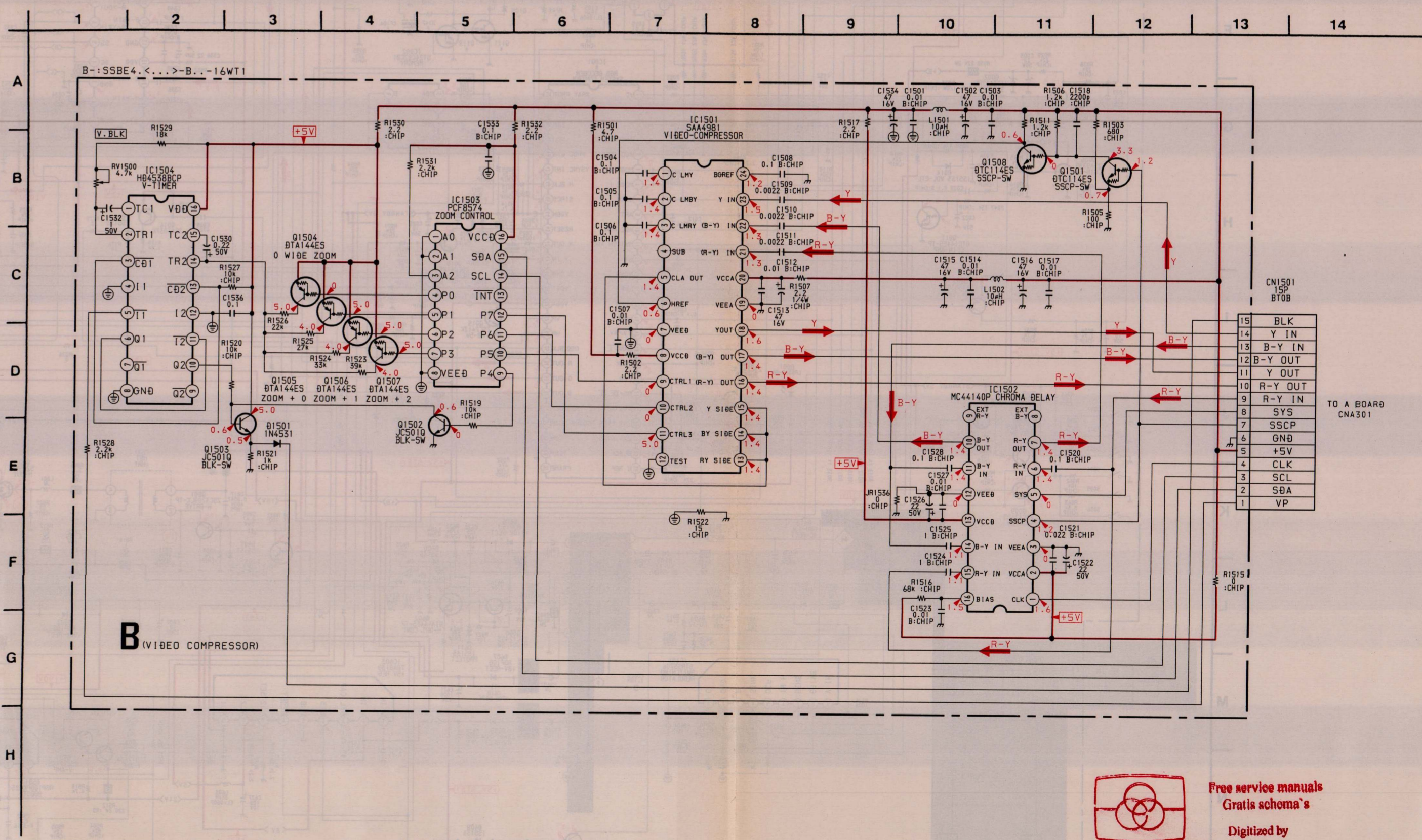
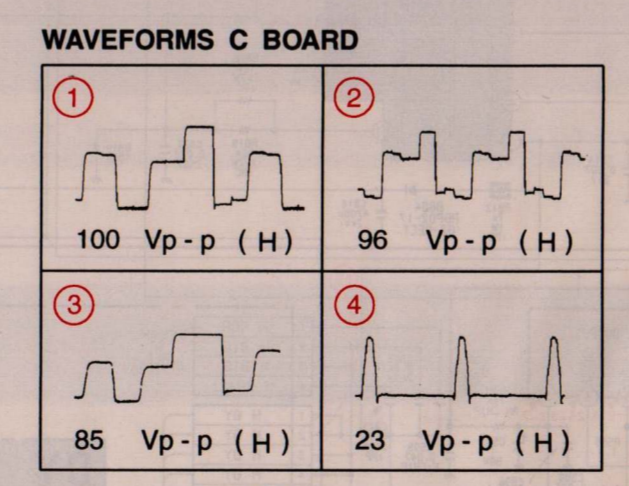
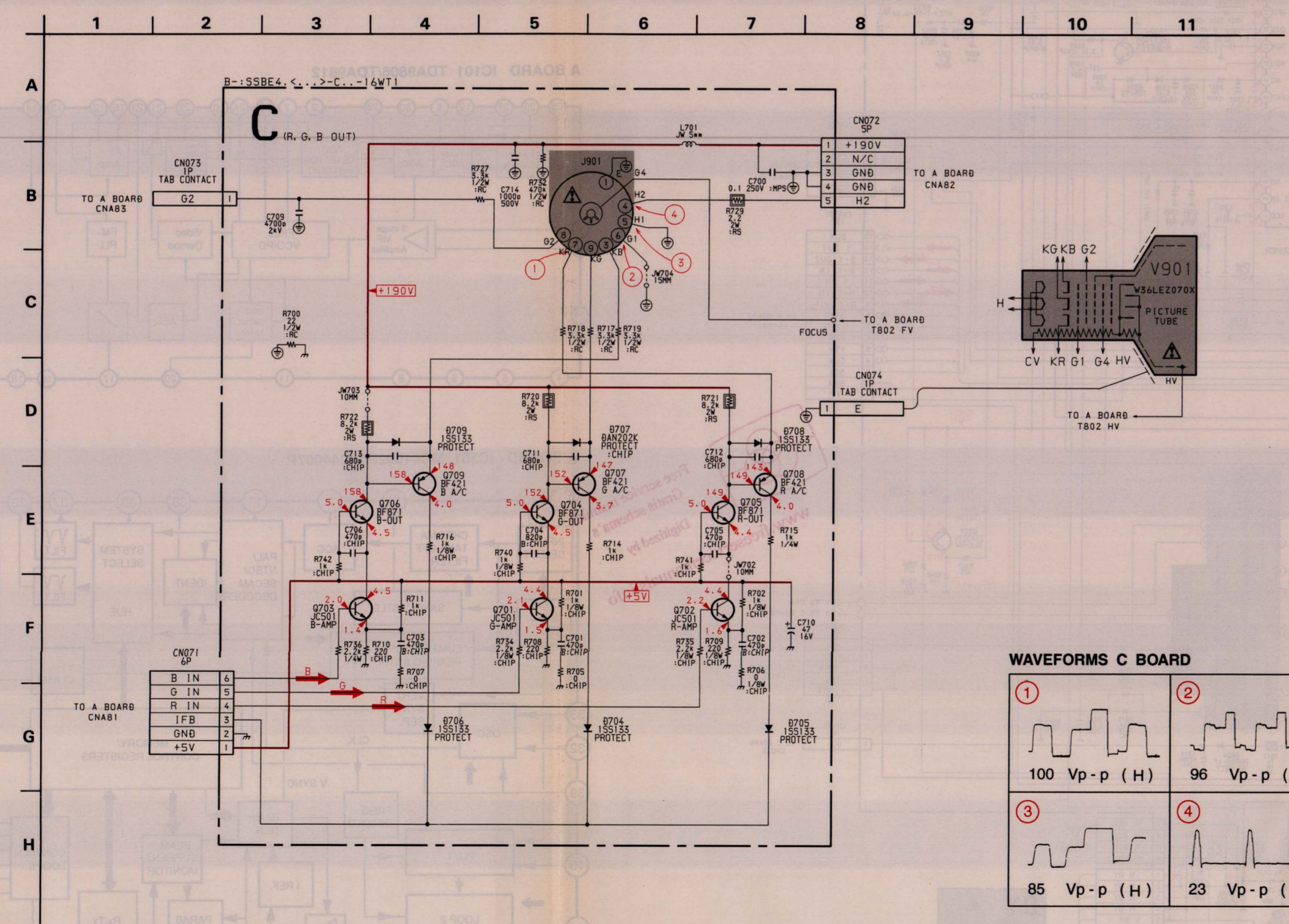
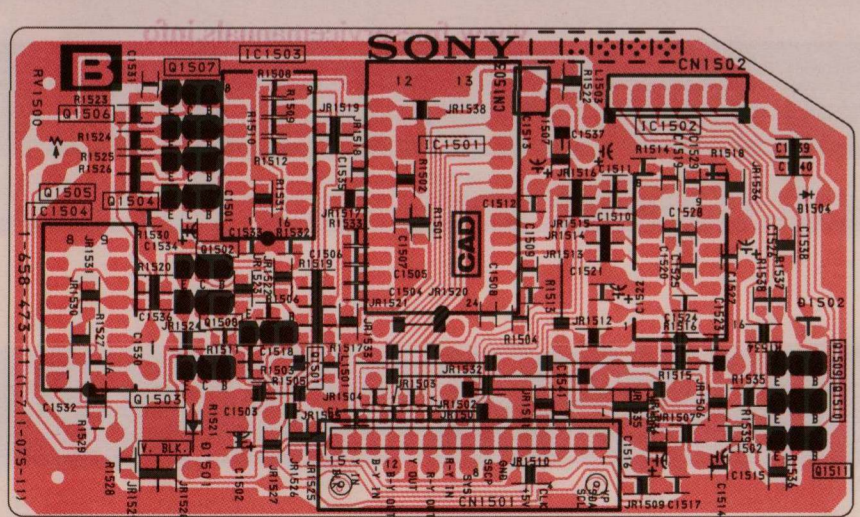


C (R,G,B OUT) B (VIDEO COMPRESSOR)

- C BOARD -

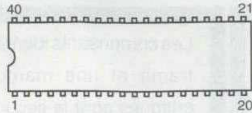


- B BOARD -



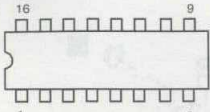
5-4. SEMICONDUCTORS

MC44002P
MC44007P



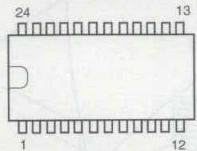
(TOP VIEW)

MC14538BCP
MC44140P
PCF8574



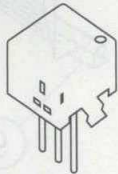
(TOP VIEW)

SAA4981T

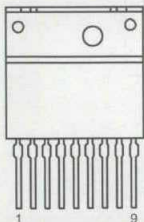


(TOP VIEW)

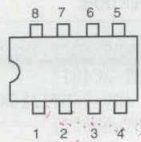
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SBX1790-51



STR-S5706

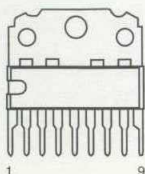


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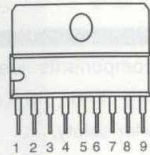


(TOP VIEW)

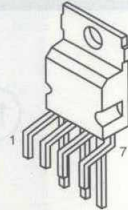
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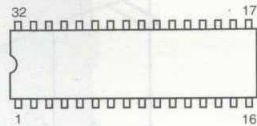
TDA8139



TDA9302H



TDA9806
TDA9812



(TOP VIEW)

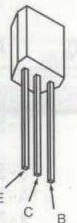
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2SA1091-O



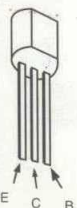
BF871



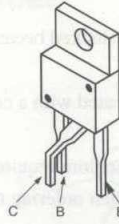
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DTC114ES
DTC144ES
2SC1740S



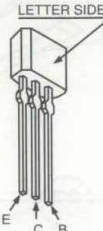
JC501-Q
2SC2785-HFE



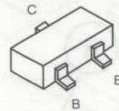
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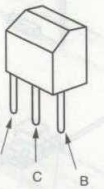
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2SA993S
2SA1175-HFE
2SC2410SN



2SA1037K-R
2SA1162-G
2SC2412K-QR



2SC3209LK



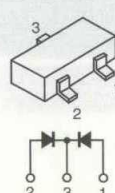
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2SD1763A

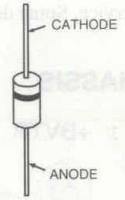


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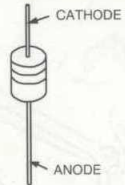


EG-1Z-V1
EGP20G
EL1Z
EM1-V1
EU-1Z

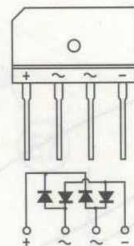
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RGP02-17PKG23
RGP10GPKG23
RGP15J-6040
1N4531
1SS168
1SS238



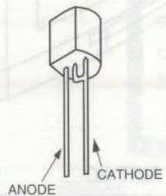
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ERA83-006
MTZJ-5.1B
MTZJ-6.8A



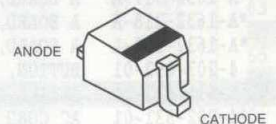
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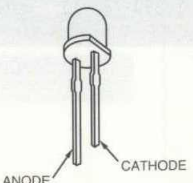
HZT33-02RE
UPC574J



1SV214



LR5360-DG



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The components identified by shading and marked **A** are critical for safety.

Replace only with the part number specified.

Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifique.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
L112	1-408-417-00	INDUCTOR	47UH	Q802	8-729-031-72	TRANSISTOR S2055N-16E314A	
L113	1-410-985-11	INDUCTOR CHIP	0.22UH	Q803	8-729-900-89	TRANSISTOR DTC144ES	
L201	1-408-609-41	INDUCTOR	33UH	< RESISTOR >			
L603	1-410-669-31	INDUCTOR	33UH	JR003	1-216-296-91	METAL GLAZE	0 5% 1/8W
L604	1-408-417-00	INDUCTOR	47UH	JR004	1-216-296-91	METAL GLAZE	0 5% 1/8W
L800	1-412-553-11	INDUCTOR	3.3MMH	JR005	1-216-295-00	METAL GLAZE	0 5% 1/10W
L802	1-407-365-00	COIL, CHOKE		JR007	1-216-295-00	METAL GLAZE	0 5% 1/10W
L805	1-412-531-91	INDUCTOR	33UH	JR008	1-216-295-00	METAL GLAZE	0 5% 1/10W
L806	1-459-756-91	COIL, HORIZONTAL LINEARITY		JR009	1-216-295-00	METAL GLAZE	0 5% 1/10W
< IC LINK >				JR012	1-216-295-00	METAL GLAZE	0 5% 1/10W
PS602	A 1-532-686-91	LINK, IC 2.7A (ICP-N75)		JR014	1-216-296-91	METAL GLAZE	0 5% 1/8W
PS603	A 1-532-637-91	LINK, IC 1.0A (ICP-N25)		JR015	1-216-295-00	METAL GLAZE	0 5% 1/10W
< TRANSISTOR >				JR017	1-216-295-00	METAL GLAZE	0 5% 1/10W
Q001	8-729-922-66	TRANSISTOR	2SC2410SN	JR018	1-216-296-91	METAL GLAZE	0 5% 1/8W
Q002	8-729-026-41	TRANSISTOR	2SA933AS-QRT	JR019	1-216-296-91	METAL GLAZE	0 5% 1/8W
Q005	8-729-920-74	TRANSISTOR	2SC2412K-QR	JR020	1-216-295-00	METAL GLAZE	0 5% 1/10W
Q006	8-729-026-41	TRANSISTOR	2SA933AS-QRT	JR021	1-216-296-91	METAL GLAZE	0 5% 1/8W
Q007	8-729-119-78	TRANSISTOR	2SC2785-HFE	JR025	1-216-295-00	METAL GLAZE	0 5% 1/10W
Q008	8-729-119-78	TRANSISTOR	2SC2785-HFE	JR026	1-216-296-91	METAL GLAZE	0 5% 1/8W
Q009	8-729-119-78	TRANSISTOR	2SC2785-HFE	JR027	1-216-296-91	METAL GLAZE	0 5% 1/8W
Q010	8-729-920-74	TRANSISTOR	2SC2412K-QR	R001	1-216-222-00	METAL GLAZE	10K 5% 1/8W
Q011	8-729-900-89	TRANSISTOR	DTC144ES	R002	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
Q012	8-729-920-74	TRANSISTOR	2SC2412K-QR	R004	1-216-238-91	METAL GLAZE	47K 5% 1/8W
Q013	8-729-920-74	TRANSISTOR	2SC2412K-QR	R005	1-216-081-00	METAL GLAZE	22K 5% 1/10W
Q014	8-729-920-74	TRANSISTOR	2SC2412K-QR	R006	1-216-089-91	METAL GLAZE	47K 5% 1/10W
Q015	8-729-920-74	TRANSISTOR	2SC2412K-QR	R008	1-216-031-00	METAL GLAZE	180 5% 1/10W
Q016	8-729-216-22	TRANSISTOR	2SA1162-G	R009	1-216-049-00	METAL GLAZE	1K 5% 1/10W
Q100	8-729-901-01	TRANSISTOR	DTC144EK	R010	1-216-041-00	METAL GLAZE	470 5% 1/10W
Q101	8-729-900-80	TRANSISTOR	DTC114ES (KV-16WT1)	R011	1-216-049-00	METAL GLAZE	1K 5% 1/10W
Q102	8-729-900-80	TRANSISTOR	DTC114ES (KV-16WT1)	R012	1-216-089-91	METAL GLAZE	47K 5% 1/10W
Q103	8-729-900-80	TRANSISTOR	DTC114ES (KV-16WT1)	R013	1-216-049-00	METAL GLAZE	1K 5% 1/10W
Q105	8-729-901-01	TRANSISTOR	DTC144EK	R014	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
Q107	8-729-119-78	TRANSISTOR	2SC2785-HFE	R015	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
Q109	8-729-022-54	TRANSISTOR	2SC3779C,D-AA (KV-16WT1)	R016	1-216-025-00	METAL GLAZE	100 5% 1/10W
Q110	8-729-901-01	TRANSISTOR	DTC144EK	R017	1-216-025-00	METAL GLAZE	100 5% 1/10W
Q111	8-729-900-89	TRANSISTOR	DTC144ES (KV-16WT1K/16WT1R)	R018	1-216-081-00	METAL GLAZE	22K 5% 1/10W
Q112	8-729-119-78	TRANSISTOR	2SC2785-HFE	R019	1-216-174-00	METAL GLAZE	100 5% 1/8W
Q113	8-729-900-89	TRANSISTOR	DTC144ES (KV-16WT1K/16WT1R)	R020	1-216-083-00	METAL GLAZE	27K 5% 1/10W
Q114	8-729-901-01	TRANSISTOR	DTC144EK	R021	1-216-174-00	METAL GLAZE	100 5% 1/8W
Q115	8-729-026-41	TRANSISTOR	2SA933AS-QRT (KV-16WT1)	R022	1-216-295-00	METAL GLAZE	0 5% 1/10W
Q116	8-729-900-89	TRANSISTOR	DTC144ES (KV-16WT1)	R024	1-216-089-91	METAL GLAZE	47K 5% 1/10W
Q300	8-729-900-80	TRANSISTOR	DTC114ES	R025	1-216-222-00	METAL GLAZE	10K 5% 1/8W
Q301	8-729-119-78	TRANSISTOR	2SC2785-HFE	R026	1-216-081-00	METAL GLAZE	22K 5% 1/10W
Q302	8-729-900-80	TRANSISTOR	DTC114ES	R027	1-216-206-00	METAL GLAZE	2.2K 5% 1/8W
Q303	8-729-900-80	TRANSISTOR	DTC114ES	R028	1-216-081-00	METAL GLAZE	22K 5% 1/10W
Q304	8-729-900-80	TRANSISTOR	DTC114ES	R029	1-216-081-00	METAL GLAZE	22K 5% 1/10W
Q305	8-729-900-80	TRANSISTOR	DTC114ES	R030	1-215-900-11	METAL OXIDE	22K 5% 2W F
Q306	8-729-900-80	TRANSISTOR	DTC114ES	R031	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
Q307	8-729-119-76	TRANSISTOR	2SA1175-HFE (KV-16WT1)	R032	1-216-049-00	METAL GLAZE	1K 5% 1/10W
Q401	8-729-119-78	TRANSISTOR	2SC2785-HFE	R033	1-216-049-00	METAL GLAZE	1K 5% 1/10W
Q402	8-729-216-22	TRANSISTOR	2SA1162-G	R034	1-249-432-11	CARBON	18K 5% 1/4W
Q403	8-729-920-74	TRANSISTOR	2SC2412K-QR	R035	1-247-863-91	CARBON	22K 5% 1/4W
Q404	8-729-920-74	TRANSISTOR	2SC2412K-QR	R036	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
Q500	8-729-017-06	TRANSISTOR	2SC4793	R037	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
Q501	8-729-119-78	TRANSISTOR	2SC2785-HFE	R039	1-216-089-91	METAL GLAZE	47K 5% 1/10W
Q600	8-729-119-78	TRANSISTOR	2SC2785-HFE	R040	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
Q602	8-729-900-65	TRANSISTOR	DTA144ES	R042	1-216-230-00	METAL GLAZE	22K 5% 1/8W
Q801	8-729-140-96	TRANSISTOR	2SD774-34	R044	1-216-073-00	METAL GLAZE	10K 5% 1/10W
				R045	1-216-081-00	METAL GLAZE	22K 5% 1/10W



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REF.NO.	PART NO.	DESCRIPTION	REMARK
R046	1-216-105-00	METAL GLAZE 220K 5%	1/10W
R047	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R049	1-216-041-00	METAL GLAZE 470 5%	1/10W
R052	1-216-238-91	METAL GLAZE 47K 5%	1/8W
R055	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R060	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R061	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R062	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R063	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R064	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R065	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R066	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R067	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R068	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R069	1-247-863-91	CARBON 22K 5%	1/4W
R070	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R071	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R072	1-216-230-00	METAL GLAZE 22K 5%	1/8W
R073	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R074	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R075	1-249-436-11	CARBON 39K 5%	1/4W
R078	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R079	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R080	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R081	1-249-438-11	CARBON 56K 5%	1/4W
R088	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
R089	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
R090	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
R091	1-249-427-11	CARBON 6.8K 5%	1/4W
R093	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R094	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R095	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R096	1-216-033-00	METAL GLAZE 220 5%	1/10W
R097	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R098	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R099	1-216-200-11	METAL GLAZE 1.2K 5%	1/8W
R102	1-216-234-00	METAL GLAZE 33K 5%	1/8W
R104	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W (KV-16WT1)
R105	1-216-025-00	METAL GLAZE 100 5%	1/10W (KV-16WT1)
R106	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W (KV-16WT1)
R107	1-216-017-91	METAL GLAZE 47 5%	1/10W (KV-16WT1)
R108	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
R109	1-216-025-00	METAL GLAZE 100 5%	1/10W (KV-16WT1)
R110	1-216-101-00	METAL GLAZE 150K 5%	1/10W
R111	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R112	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W (KV-16WT1)
R113	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W (KV-16WT1)
R114	1-216-073-00	METAL GLAZE 10K 5%	1/10W (KV-16WT1)
R115	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W (KV-16WT1)
R116	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R117	1-216-089-91	METAL GLAZE 47K 5%	1/10W

REF.NO.	PART NO.	DESCRIPTION	REMARK
R118	1-216-075-00	METAL GLAZE 12K 5%	1/10W
R122	1-216-025-00	METAL GLAZE 100 5%	1/10W (KV-16WT1K/16WT1R)
	1-216-029-00	METAL GLAZE 150 5%	1/10W (KV-16WT1/16WT1A/16WT1U)
R123	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R124	1-216-025-00	METAL GLAZE 100 5%	1/10W
R125	1-216-025-00	METAL GLAZE 100 5%	1/10W
R126	1-216-025-00	METAL GLAZE 100 5%	1/10W
R127	1-216-180-00	METAL GLAZE 180 5%	1/8W
R128	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R133	1-249-429-11	CARBON 10K 5%	1/4W
R134	1-216-029-00	METAL GLAZE 150 5%	1/10W (KV-16WT1U)
	1-216-031-00	METAL GLAZE 180 5%	1/10W (KV-16WT1/16WT1A/16WT1K/16WT1R)
R136	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R137	1-216-109-00	METAL GLAZE 330K 5%	1/10W
R138	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R141	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R142	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R143	1-216-295-00	METAL GLAZE 0 5%	1/10W (KV-16WT1/16WT1A/16WT1U)
R144	1-216-206-00	METAL GLAZE 2.2K 5%	1/8W (KV-16WT1K/16WT1R)
R145	1-216-206-00	METAL GLAZE 2.2K 5%	1/8W (KV-16WT1K/16WT1R)
R146	1-216-043-91	METAL GLAZE 560 5%	1/10W
R147	1-216-043-91	METAL GLAZE 560 5%	1/10W (KV-16WT1K/16WT1R)
R149	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W (KV-16WT1K/16WT1R)
R151	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R153	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R154	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R155	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R157	1-216-049-00	METAL GLAZE 1K 5%	1/10W (KV-16WT1)
R158	1-216-031-00	METAL GLAZE 180 5%	1/10W (KV-16WT1)
	1-216-039-00	METAL GLAZE 390 5%	1/10W (KV-16WT1A/16WT1K/16WT1R/16WT1U)
R159	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R160	1-216-238-91	METAL GLAZE 47K 5%	1/8W
R161	1-216-295-00	METAL GLAZE 0 5%	1/10W (KV-16WT1A/16WT1K/16WT1R/16WT1U)
R162	1-216-017-91	METAL GLAZE 47 5%	1/10W (KV-16WT1)
R163	1-249-407-11	CARBON 150 5%	1/4W
R167	1-216-246-91	METAL GLAZE 100K 5%	1/8W
R168	1-249-407-11	CARBON 150 5%	1/4W
R169	1-216-073-00	METAL GLAZE 10K 5%	1/10W (KV-16WT1)
R170	1-216-063-91	METAL GLAZE 3.9K 5%	1/10W (KV-16WT1)
R171	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W (KV-16WT1)
R175	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R176	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R177	1-216-295-00	METAL GLAZE 0 5%	1/10W

KV-16WT1



The components identified by shading and marked Δ are critical for safety. Replace only with the part number specified.

Les composants identifiés par une trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R178	1-216-055-00	METAL GLAZE 1.8K	5% 1/10W	R406	1-216-091-00	METAL GLAZE 56K	5% 1/10W
R179	1-216-212-00	METAL GLAZE 3.9K	5% 1/8W	R407	1-216-041-00	METAL GLAZE 470	5% 1/10W
R180	1-216-049-00	METAL GLAZE 1K	5% 1/10W	R408	1-216-033-00	METAL GLAZE 220	5% 1/10W
			(KV-16WT1)				
R205	1-247-741-11	CARBON 150	5% 1/2W	R410	1-247-698-11	CARBON 68	5% 1/4W
R301	1-216-073-00	METAL GLAZE 10K	5% 1/10W		1-247-804-11	CARBON 75	5% 1/4W
R302	1-216-037-00	METAL GLAZE 330	5% 1/10W			(KV-16WT1/16WT1A/16WT1K/16WT1R)	
R303	1-216-090-00	METAL GLAZE 51K	5% 1/10W	R411	1-216-085-00	METAL GLAZE 33K	5% 1/10W
R304	1-216-025-00	METAL GLAZE 100	5% 1/10W				
R305	1-216-025-00	METAL GLAZE 100	5% 1/10W	R412	1-216-105-00	METAL GLAZE 220K	5% 1/10W
R307	1-216-121-91	METAL GLAZE 1M	5% 1/10W	R413	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R308	1-216-234-00	METAL GLAZE 33K	5% 1/8W	R414	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R309	1-216-121-91	METAL GLAZE 1M	5% 1/10W	R415	1-216-222-00	METAL GLAZE 10K	5% 1/8W
R310	1-216-089-91	METAL GLAZE 47K	5% 1/10W	R416	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R311	1-216-093-00	METAL GLAZE 68K	5% 1/10W	R501	1-208-806-11	METAL CHIP 10K	0.50% 1/10W
R312	1-216-089-91	METAL GLAZE 47K	5% 1/10W	R502	1-216-677-11	METAL CHIP 12K	0.50% 1/10W
R313	1-216-045-00	METAL GLAZE 680	5% 1/10W	R503	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R314	1-216-045-00	METAL GLAZE 680	5% 1/10W	R504	1-216-095-00	METAL GLAZE 82K	5% 1/10W
R315	1-216-045-00	METAL GLAZE 680	5% 1/10W	R505	1-216-075-00	METAL GLAZE 12K	5% 1/10W
R316	1-216-033-00	METAL GLAZE 220	5% 1/10W	R506	1-216-079-00	METAL GLAZE 18K	5% 1/10W
R317	1-216-182-00	METAL GLAZE 220	5% 1/8W	R507	1-216-350-11	METAL OXIDE 1.2	5% 1W F
R318	1-216-019-00	METAL GLAZE 56	5% 1/10W	R508	1-215-865-11	METAL OXIDE 220	5% 1W F
R322	1-216-022-00	METAL GLAZE 75	5% 1/10W	R509	1-249-383-11	CARBON 1.5	5% 1/4W F
R323	1-216-089-91	METAL GLAZE 47K	5% 1/10W	R512	1-215-888-00	METAL OXIDE 220	5% 2W F
R325	1-216-089-91	METAL GLAZE 47K	5% 1/10W	R513	1-249-425-11	CARBON 4.7K	5% 1/4W
R329	1-216-295-00	METAL GLAZE 0	5% 1/10W	R514	1-216-089-91	METAL GLAZE 47K	5% 1/10W
R333	1-216-037-00	METAL GLAZE 330	5% 1/10W	R515	1-215-912-11	METAL OXIDE 150	5% 3W F
R334	1-216-033-00	METAL GLAZE 220	5% 1/10W	R600	1-216-365-00	METAL OXIDE 0.47	5% 2W F
R335	1-216-295-00	METAL GLAZE 0	5% 1/10W	R601	1-205-909-11	WIREWOUND 3.3	5% 10W
R336	1-216-296-91	METAL GLAZE 0	5% 1/8W	R603	1-215-860-11	METAL OXIDE 33	5% 1W F
R337	1-216-295-00	METAL GLAZE 0	5% 1/10W	R604	1-215-927-00	METAL OXIDE 47K	5% 3W F
R339	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W	R606	1-249-441-11	CARBON 100K	5% 1/4W
R340	1-216-115-00	METAL GLAZE 560K	5% 1/10W	R607	1-216-366-00	METAL OXIDE 0.56	5% 2W F
R341	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R608	1-216-645-11	METAL CHIP 560	0.50% 1/10W
R342	1-216-186-00	METAL GLAZE 330	5% 1/8W	R609	1-215-861-00	METAL OXIDE 47	5% 1W F
R343	1-216-295-00	METAL GLAZE 0	5% 1/10W	R610	1-249-419-11	CARBON 1.5K	5% 1/4W
R344	1-216-295-00	METAL GLAZE 0	5% 1/10W	R611	1-215-430-00	METAL 2.4K	1% 1/4W
R345	1-216-089-91	METAL GLAZE 47K	5% 1/10W	R612	1-202-719-91	SOLID 1M	10% 1/2W
R347	1-216-041-00	METAL GLAZE 470	5% 1/10W	R614	1-218-265-21	METAL 8.2M	5% 1W
			(KV-16WT1)				
R348	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R615	1-217-371-00	FUSIBLE 0.47	10% 1/4W F
			(KV-16WT1)	R617	1-216-659-11	METAL CHIP 2.2K	0.50% 1/10W
R349	1-216-105-00	METAL GLAZE 220K	5% 1/10W	R618	1-216-659-11	METAL CHIP 2.2K	0.50% 1/10W
			(KV-16WT1)	R620	1-215-479-91	METAL 270K	1% 1/4W
R350	1-216-033-00	METAL GLAZE 220	5% 1/10W	R621	1-249-429-21	CARBON 10K	5% 1/4W
			(KV-16WT1)				
R351	1-216-292-11	METAL GLAZE 8.2M	5% 1/8W	R622	1-247-895-91	METAL GLAZE 470K	5% 1/4W
R352	1-216-262-00	METAL GLAZE 470K	5% 1/8W	R623	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R353	1-247-804-11	CARBON 75	5% 1/4W	R624	1-216-033-00	METAL GLAZE 220	5% 1/10W
R354	1-216-025-00	METAL GLAZE 100	5% 1/10W	R625	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R355	1-216-121-91	METAL GLAZE 1M	5% 1/10W	R626	1-216-089-91	METAL GLAZE 47K	5% 1/10W
R356	1-216-121-91	METAL GLAZE 1M	5% 1/10W	R627	1-216-346-00	METAL OXIDE 0.56	5% 1W F
R357	1-216-091-00	METAL GLAZE 56K	5% 1/10W	R630	1-249-401-11	CARBON 47	5% 1/4W
R358	1-216-009-00	METAL GLAZE 22	5% 1/10W	R800	1-215-864-00	METAL OXIDE 150	5% 1W F
R361	1-216-022-00	METAL GLAZE 75	5% 1/10W	R801	1-247-891-00	CARBON 330K	5% 1/4W
R362	1-216-022-00	METAL GLAZE 75	5% 1/10W	R802	1-247-807-31	CARBON 100	5% 1/4W
R363	1-216-022-00	METAL GLAZE 75	5% 1/10W	R803	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R401	1-216-041-00	METAL GLAZE 470	5% 1/10W	R804	1-217-778-11	FUSIBLE 1K	5% 1W F
R402	1-249-431-11	CARBON 15K	5% 1/4W	R806	1-216-353-00	METAL OXIDE 2.2	5% 1W F
R403	1-249-431-11	CARBON 15K	5% 1/4W	R807	1-216-013-00	METAL GLAZE 33	5% 1/10W
R405	1-249-387-11	CARBON 3.3	5% 1/4W F	R808	1-202-833-11	SOLID 18K	10% 1/2W
				R810	1-247-895-91	CARBON 470K	5% 1/4W
				R812	1-215-869-11	METAL OXIDE 1K	5% 1W F

The components identified by shading and marked **A** are critical for safety. Replace only with the part number specified.

Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



REF.NO.	PART NO.	DESCRIPTION	REMARK
R814	1-217-811-11	FUSIBLE 0.47 5% 1/4W	
R816	1-216-369-00	METAL OXIDE 1 5% 2W F	
R817	1-216-447-00	METAL OXIDE 27 5% 2W F	
R818	1-202-813-00	SOLID 22K 10% 1/2W	
R819	1-249-441-11	CARBON 100K 5% 1/4W	
R820	1-217-820-11	FUSIBLE 3.3K 5% 1/4W	
< VARIABLE RESISTOR >			
RV102	1-241-765-11	RES, ADJ, METAL GLAZE 22K (KV-16WT1)	
< SWITCH >			
S001	1-571-532-21	SWITCH, TACTIL	
S002	1-571-532-21	SWITCH, TACTIL	
S003	1-571-532-21	SWITCH, TACTIL	
S004	1-571-532-21	SWITCH, TACTIL	
S005	1-571-532-21	SWITCH, TACTIL	
S006	1-571-532-21	SWITCH, TACTIL	
S601	1-571-433-21	SWITCH, PUSH (AC POWER)	
< TRANSFORMER >			
T601	1-427-962-11	TRANSFORMER, LINE FILTER	
T602	1-427-994-11	TRANSFORMER, CONVERTER	
T801	1-437-090-00	HDT	
T802	1-453-191-11	TRANSFORMER ASSY, FLYBACK (NX-1740/U2A)	
< THERMISTOR >			
THP601	1-806-165-12	THERMISTOR (POSITIVE)	
< TUNER >			
TU101	8-598-331-00	TUNER (BT-AC401) (KV-16WT1/16WT1A/16WT1K/16WT1R)	
	8-598-333-00	TUNER (BT-AU601) (KV-16WT1U)	
< CRYSTAL >			
X001	1-578-774-11	VIBRATOR, CRYSTAL	
X302	1-760-710-21	VIBRATOR, CRYSTAL	

	*A-1638-067-A	C BOARD, COMPLETE	*****
< CAPACITOR >			
C700	1-136-189-00	FILM 0.1MF 10% 250V	
C701	1-163-197-00	CERAMIC CHIP 470PF 10% 50V	
C702	1-163-197-00	CERAMIC CHIP 470PF 10% 50V	
C703	1-163-197-00	CERAMIC CHIP 470PF 10% 50V	
C704	1-163-197-00	CERAMIC CHIP 470PF 10% 50V	
C705	1-163-197-00	CERAMIC CHIP 470PF 10% 50V	
C706	1-163-197-00	CERAMIC CHIP 470PF 10% 50V	
C709	1-162-114-00	CERAMIC 0.0047MF 2KV	
C710	1-104-664-11	ELECT 47MF 20% 16V	
C711	1-163-201-00	CERAMIC CHIP 680PF 10% 50V	
C712	1-163-201-00	CERAMIC CHIP 680PF 10% 50V	
C713	1-163-201-00	CERAMIC CHIP 680PF 10% 50V	
C714	1-162-318-11	CERAMIC 0.001MF 10% 500V	
< CONNECTOR >			
CN071	*1-568-881-51	PIN, CONNECTOR 6P	
CN072	*1-568-880-51	PIN, CONNECTOR 5P	

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN073	1-695-915-11	TAB (CONTACT)	
CN074	1-695-915-11	TAB (CONTACT)	
< DIODE >			
D704	8-719-991-33	DIODE 1SS133T-77	
D705	8-719-991-33	DIODE 1SS133T-77	
D706	8-719-991-33	DIODE 1SS133T-77	
D707	8-719-914-43	DIODE DAN202K	
D708	8-719-991-33	DIODE 1SS133T-77	
D709	8-719-991-33	DIODE 1SS133T-77	
< CRT SOCKET >			
J901	1-251-212-11	SOCKET, CRT	
< TRANSISTOR >			
Q701	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q702	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q703	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q704	8-729-906-70	TRANSISTOR BF871-127	
Q705	8-729-906-70	TRANSISTOR BF871-127	
Q706	8-729-906-70	TRANSISTOR BF871-127	
Q707	8-729-200-17	TRANSISTOR 2SA1091-0	
Q708	8-729-200-17	TRANSISTOR 2SA1091-0	
Q709	8-729-200-17	TRANSISTOR 2SA1091-0	
< RESISTOR >			
R700	1-202-533-11	SOLID 22 5% 1/2W	
R701	1-216-198-91	METAL GLAZE 1K 5% 1/8W	
R702	1-216-198-91	METAL GLAZE 1K 5% 1/8W	
R705	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R706	1-216-296-91	METAL GLAZE 0 5% 1/8W	
R707	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R708	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R709	1-216-182-00	METAL GLAZE 220 5% 1/8W	
R710	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R711	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R714	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R715	1-249-417-11	CARBON 1K 5% 1/4W	
R716	1-216-198-91	METAL GLAZE 1K 5% 1/8W	
R717	1-202-824-00	SOLID 3.3K 10% 1/2W	
R718	1-202-824-00	SOLID 3.3K 10% 1/2W	
R719	1-202-824-00	SOLID 3.3K 10% 1/2W	
R720	1-216-462-00	METAL OXIDE 8.2K 5% 2W F	
R721	1-216-462-00	METAL OXIDE 8.2K 5% 2W F	
R722	1-216-462-00	METAL OXIDE 8.2K 5% 2W F	
R727	1-202-824-00	SOLID 3.3K 10% 1/2W	
R729	1-216-373-11	METAL OXIDE 2.2 5% 2W F	
R732	1-202-846-00	SOLID 470K 10% 1/2W	
R734	1-216-206-00	METAL GLAZE 2.2K 5% 1/8W	
R735	1-216-206-00	METAL GLAZE 2.2K 5% 1/8W	
R736	1-249-421-11	CARBON 2.2K 5% 1/4W	
R740	1-216-198-91	METAL GLAZE 1K 5% 1/8W	
R741	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R742	1-216-049-91	METAL GLAZE 1K 5% 1/10W	

The components identified by shading and marked with a triangle are critical for safety. Replace only with the part number specified.

Les composants identifiés par une trame et une marque triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF.NO. PART NO. DESCRIPTION REMARK REF.NO. PART NO. DESCRIPTION REMARK

MISCELLANEOUS *****

- 1-411-510-11 COIL, DEGAUSSING
1-452-032-00 MAGNET, DISK; 10MM Ø
1-452-094-00 MAGNET, ROTATABLE DISK; 15MM Ø
1-452-787-11 NECK ASSY, PICTURE TUBE (NA-222)
1-453-191-11 TRANSFORMER ASSY, FLYBACK (NX-1740/U2A)

- 1-505-200-11 SPEAKER (5X11CM)
1-540-007-11 CAP ASSY, HIGH-VOLTAGE
1-571-433-21 SWITCH, PUSH (AC POWER)

- 1-690-270-11 CORD, POWER (WITH CONNECTOR) 2.5A/250V (KV-16WT1/16WT1A/16WT1K/16WT1R)
1-590-762-11 CORD, POWER (WITH PLUG) 2.5A/250V (KV-16WT1U)

- 8-451-456-11 DEFLECTION YOKE (Y16GIAK)
8-598-331-00 TUNER (BT-AC401) (KV-16WT1/16WT1A/16WT1K/16WT1R)
8-598-333-00 TUNER (BT-AU601) (KV-16WT1U)
8-737-803-05 PICTURE TUBE (SD-280) (W36LEZ070X)

ACCESSORIES AND PACKING MATERIALS *****

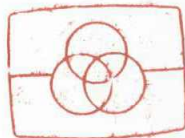
- *4-039-905-02 BAG, PROTECTION
4-203-063-11 MANUAL, INSTRUCTION (KV-16WT1) (GERMAN/ENGLISH/DUTCH/ITALIAN/FRENCH)
4-203-087-11 MANUAL, INSTRUCTION (KV-16WT1) (SPANISH/DANISH/SWEDISH/FINNISH/GREEK/PORTUGUESE)
4-203-063-41 MANUAL, INSTRUCTION (KV-16WT1A) (ITALIAN)
4-203-063-91 MANUAL, INSTRUCTION (KV-16WT1K) (ENGLISH/CZECH/POLISH/HUNGARIAN)
4-203-087-91 MANUAL, INSTRUCTION (KV-16WT1R) (FRENCH/GERMAN/ITALIAN)
4-203-061-61 MANUAL, INSTRUCTION (KV-16WT1U) (ENGLISH)
*4-203-101-01 INDIVIDUAL CARTON
*4-203-102-01 CUSHION (TOP) (ASSY)
*4-203-103-01 CUSHION (LOWER) (ASSY)

REMOTE COMMANDER *****

- 1-473-194-11 COMMANDER, STANDARD TYPE (RM-836)

KV-16W11

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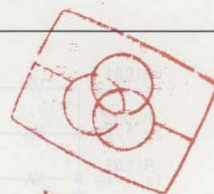
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SERVICE MANUAL

BE-4 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-16WT1	RM-836	Italian	SCC-H64G-A	KV-16WT1R	RM-836	OIRT	SCC-H52H-A
KV-16WT1A	RM-836	Italian	SCC-H64F-A	KV-16WTU	RM-836	OIRT	SCC-H52F-A
KV-16WT1K	RM-836	French	SCC-H65F-A				



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SUPPLEMENT - 1

SUBJECT : ADDITION OF U BOARD

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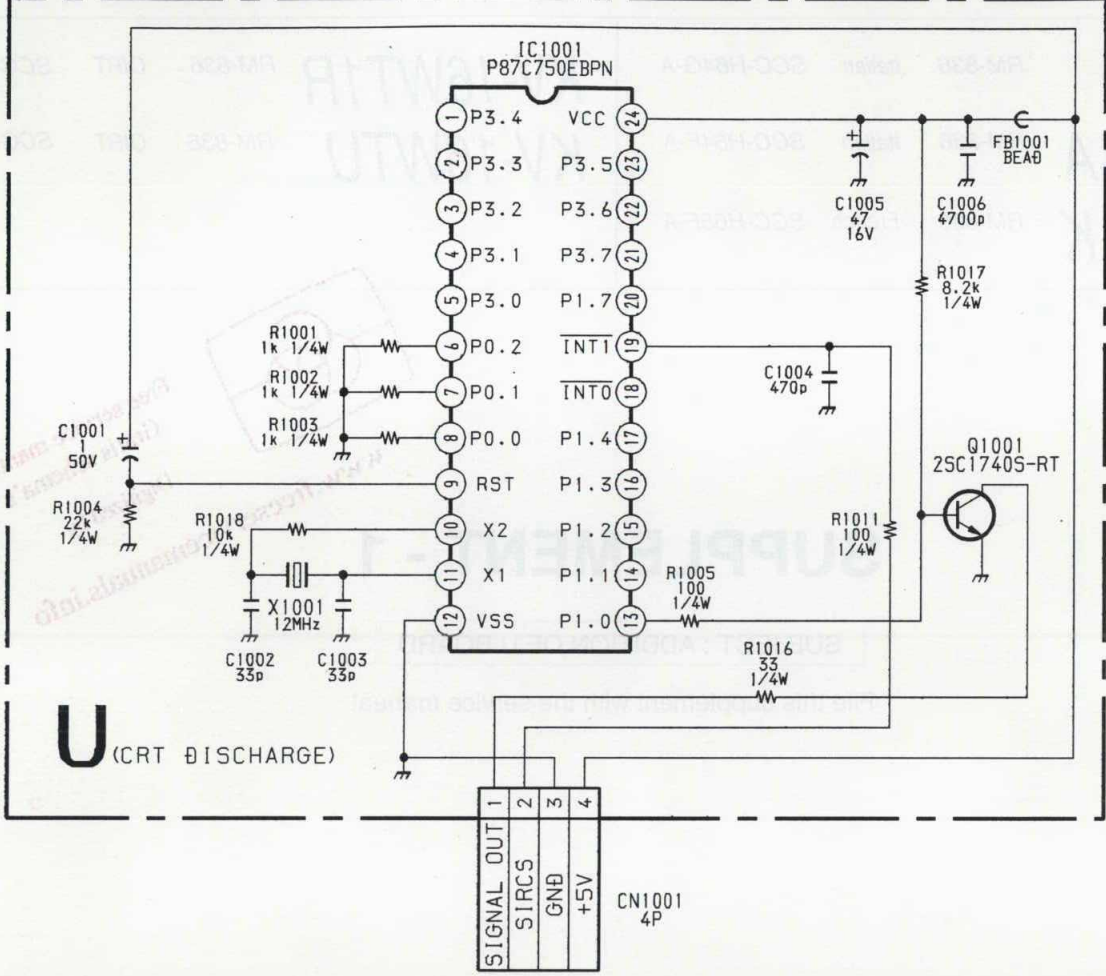


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SONY®

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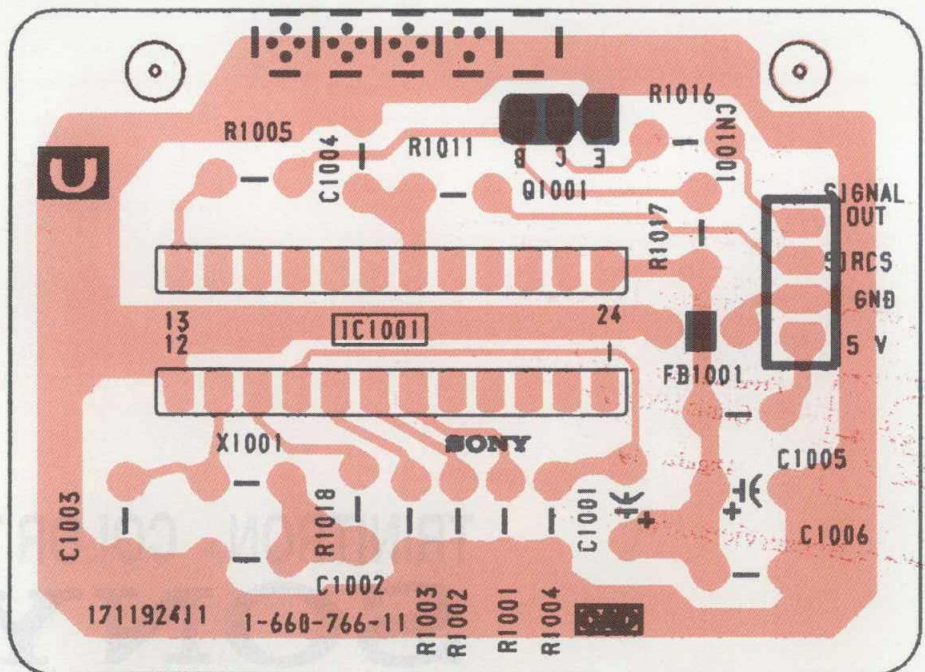
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B-#SSBE4A<...>-U..-SUP



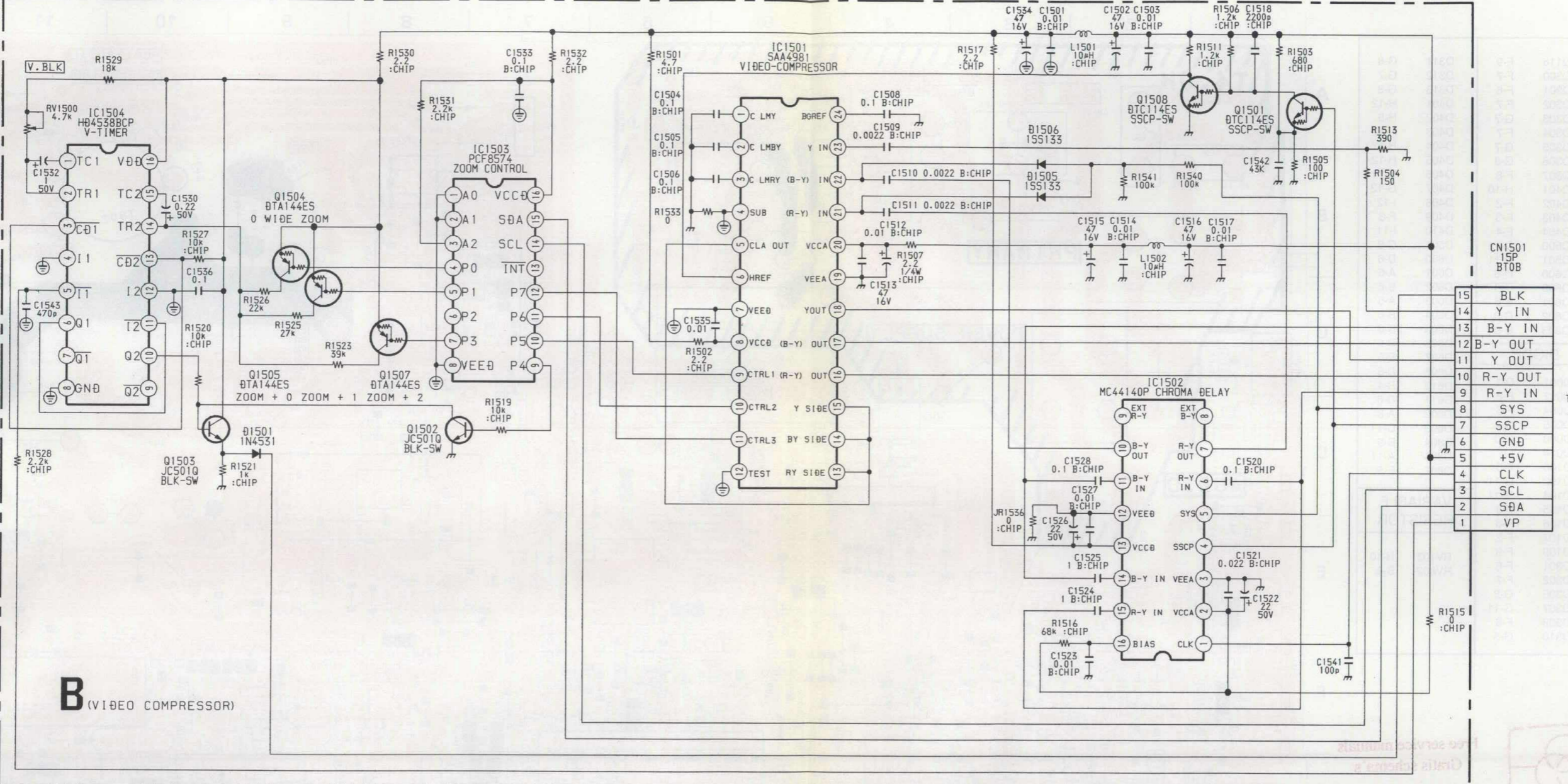
U (CRT DISCHARGE)

U Board



B [VIDEO COMPRESSOR]

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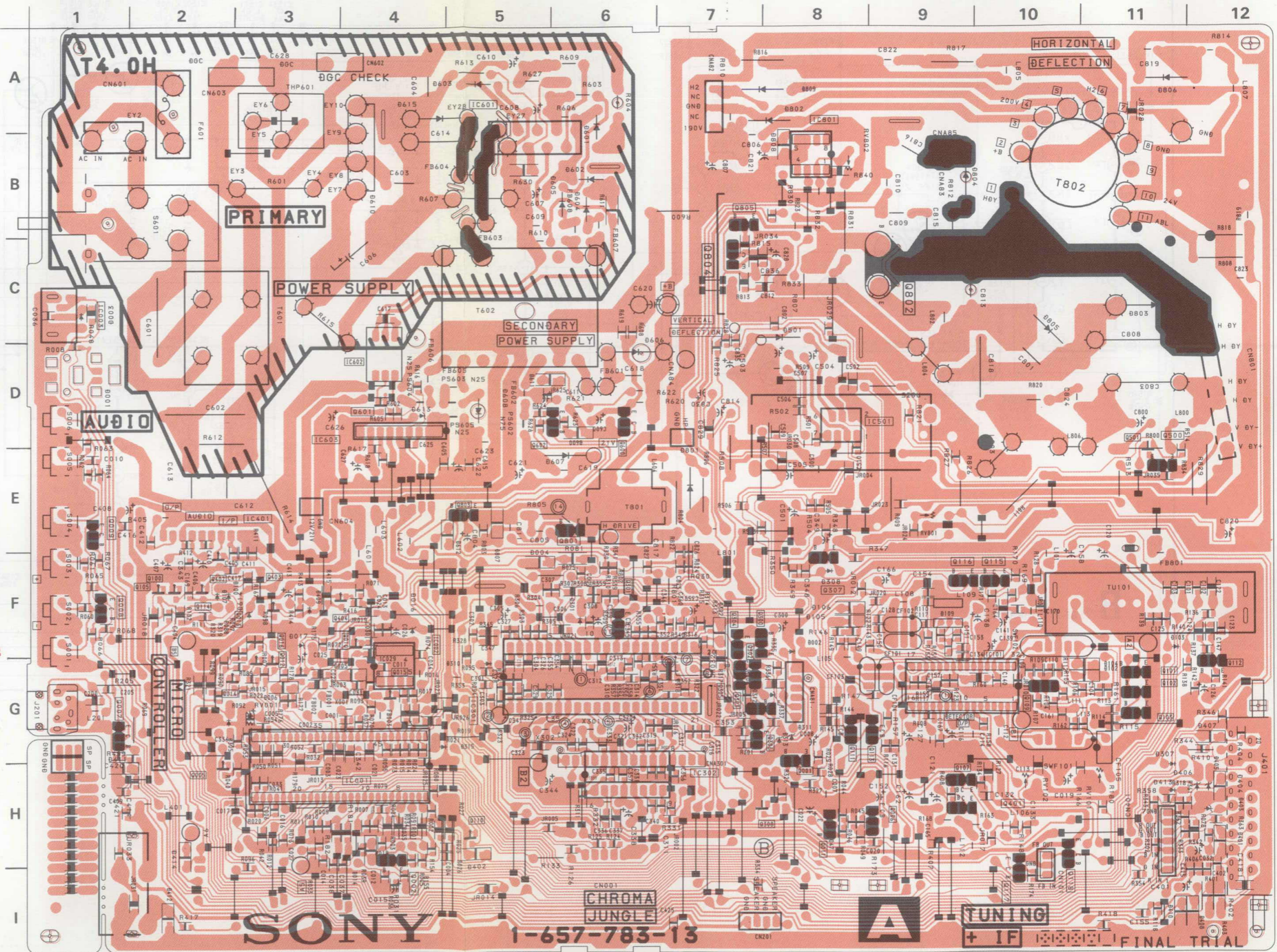
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A SYSTEM CONTROL, HORIZONTAL OUTPUT, VERTICAL OUTPUT, CHROMINANCE, POWER, AUDIO

A BOARD

A Board

IC		Q116 F-9	D311 G-8
IC001 H-4	Q300 F-7	D312 G-7	
IC002 G-4	Q301 F-6	D313 G-8	
IC003 C-1	Q302 F-7	D401 H-12	
IC101 G-10	Q303 G-7	D402 H-5	
IC301 G-5	Q304 F-7	D403 H-12	
IC302 H-7	Q305 G-7	D404 H-12	
IC401 E-3	Q306 G-8	D405 H-12	
IC501 D-9	Q307 F-8	D406 H-11	
IC601 A-5	Q401 H-10	D407 G-12	
IC603 D-3	Q402 F-2	D408 I-12	
IC801 B-8	Q403 F-3	D409 F-3	
	Q404 F-4	D410 I-11	
TRANSISTOR		Q500 D-11	D501 C-8
Q001 H-8	Q501 D-11	D600 D-6	
Q002 I-4	Q600 D-6	D601 A-6	
Q005 H-2	Q602 D-6	D602 B-6	
Q006 H-9	Q801 E-6	D603 A-5	
Q007 G-1	Q802 C-9	D604 B-6	
Q008 F-1	Q803 E-5	D605 B-6	
Q009 E-1		D606 D-6	
Q010 F-4	DIODE		D607 E-6
Q011 H-8	D001 D-1	D608 D-5	
Q012 G-3	D002 F-8	D610 B-4	
Q013 F-3	D004 F-5	D611 D-6	
Q014 G-2	D005 G-4	D802 A-8	
Q015 G-4	D006 G-3	D803 C-11	
Q016 F-3	D014 I-4	D804 B-9	
Q100 F-2	D100 F-3	D806 A-11	
Q101 G-11	D102 G-11	D807 E-5	
Q102 G-11	D104 G-11		
Q103 G-11	D105 F-8	VARIABLE RESISTOR	
Q105 F-2	D106 F-8	RV102 H-10	
Q107 H-9	D107 F-2	RV802 B-8	
Q109 G-10	D109 F-9		
Q110 H-5	D301 F-6		
Q111 G-8	D302 F-7		
Q112 G-12	D305 G-2		
Q113 G-9	D307 G-11		
Q114 F-2	D308 F-8		
Q115 F-10	D310 G-5		



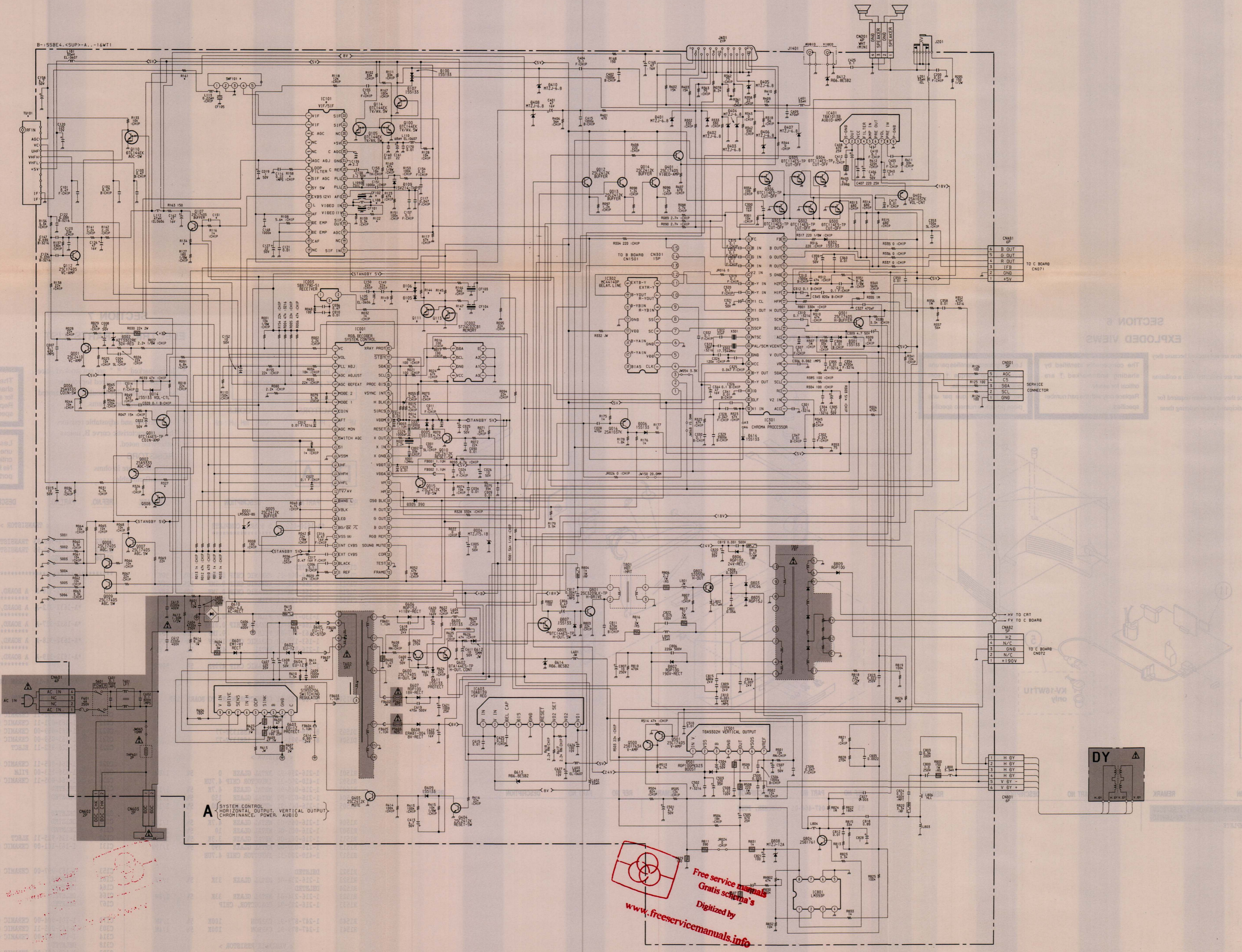
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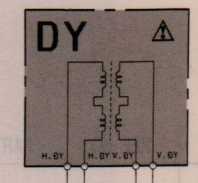
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A SYSTEM CONTROL, HORIZONTAL OUTPUT, VERTICAL OUTPUT, CHROMANCE, POWER, AUDIO

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 Gratis schema's
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EXPLODED VIEWS

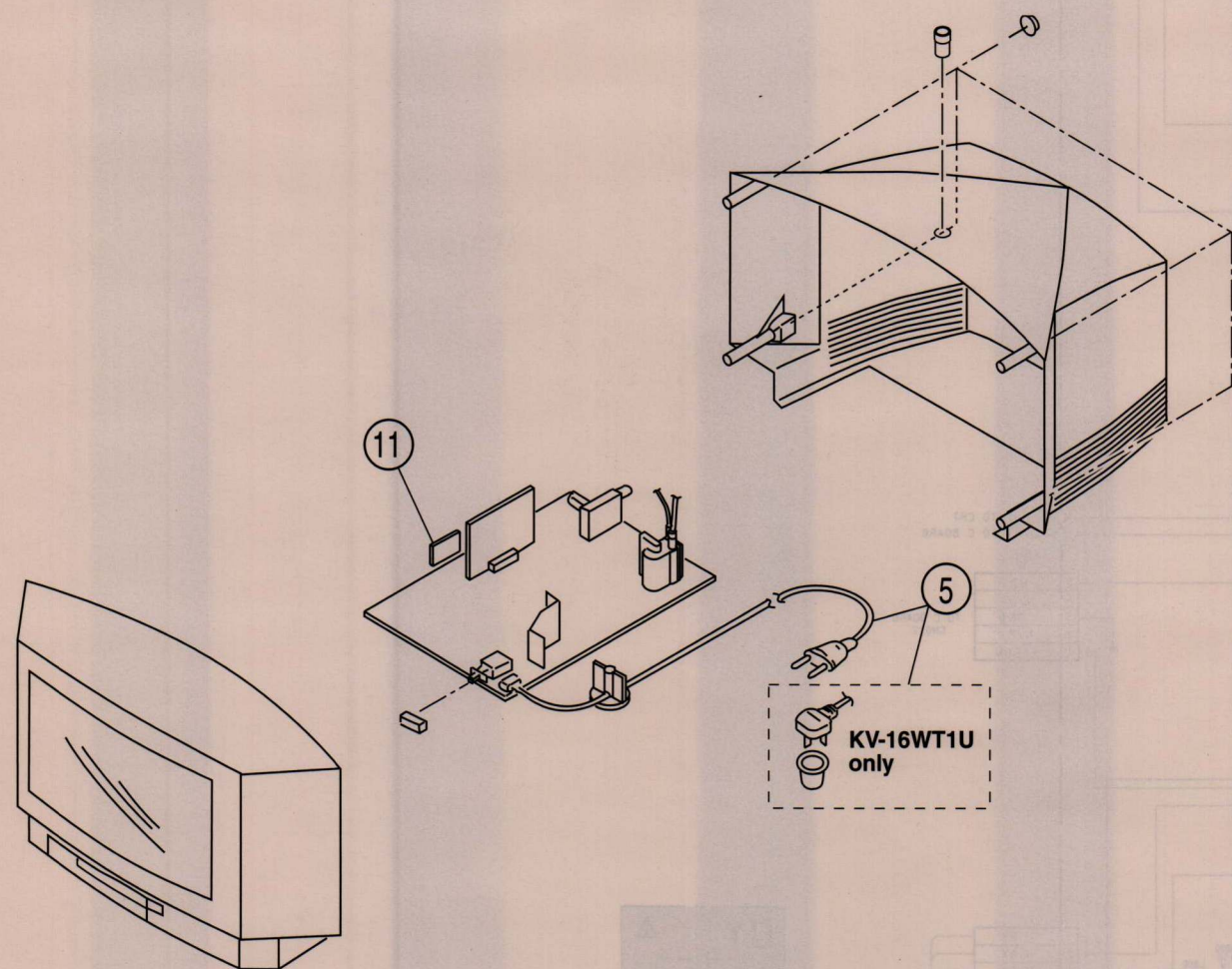
NOTE :

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

6-1. CHASSIS

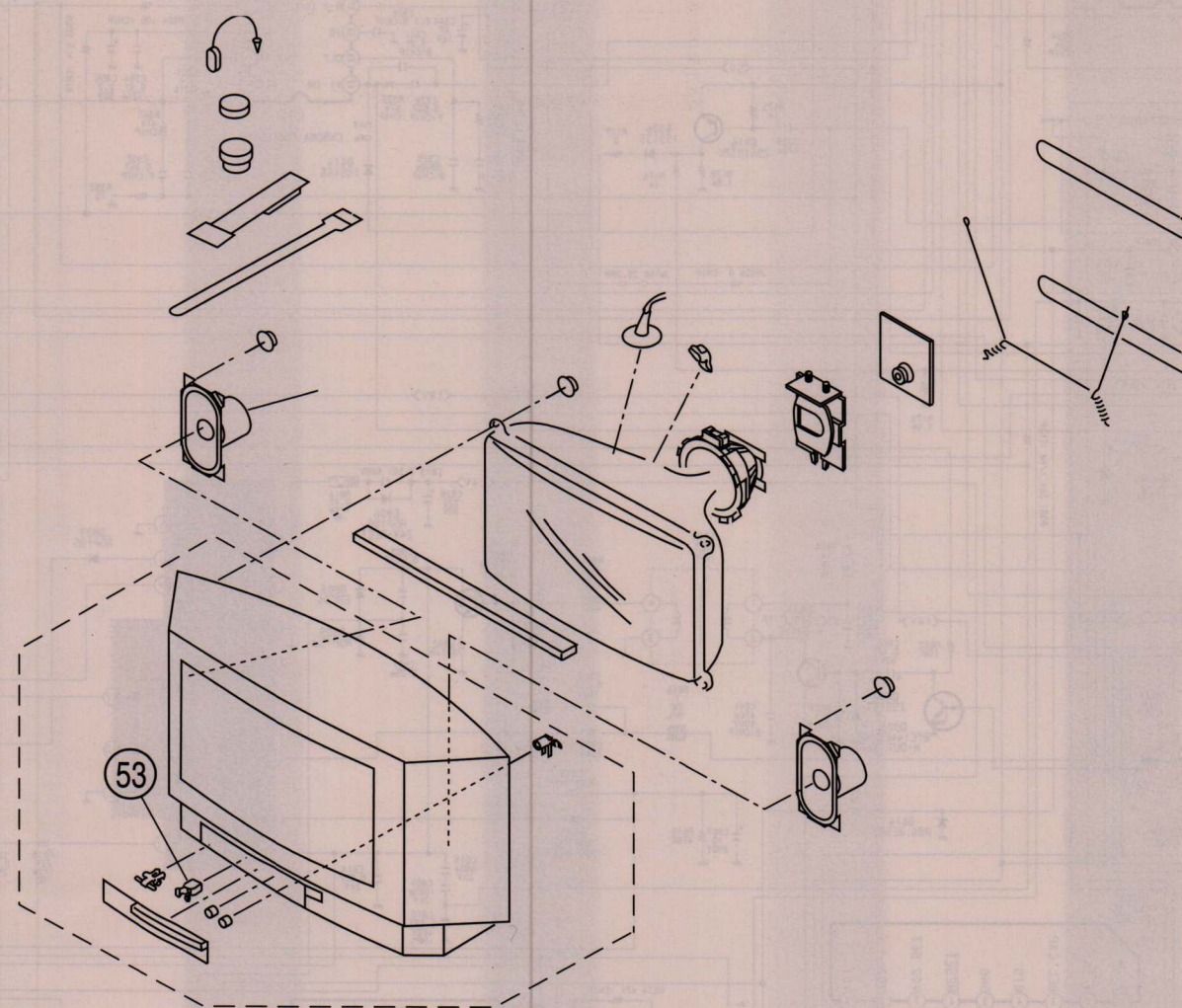
The components identified by shading and marked **A** are critical for safety. Replace only with the part number specified.

Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



REF NO	PART NO	DESCRIPTION	REMARK	REF NO	PART NO	DESCRIPTION	REMARK
5	A 1-690-270-11	CORD, POWER (WITH CONNECTOR) 2.5A/250V (KV-16WT1U)					
11	*A-1648-006-A	U BOARD, COMPLETE					

6-2. PICTURE TUBE



REF NO	PART NO	DESCRIPTION	REMARK	REF NO	PART NO	DESCRIPTION	REMARK
53	4-047-464-01	CATCHER, PUSH					

ELECTRICAL PARTS LIST

When indicating parts by reference number, please include the board name.

CAPACITORS COILS
MF : mF, PF : mmF MMH : mH, μH : μH

B **A**

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
*A-1620-060-A B BOARD, COMPLETE *****				< TRANSISTOR >			
		< CAPACITOR >		Q1502	8-729-900-95	TRANSISTOR 2SC1740S-RT	
				Q1503	8-729-900-95	TRANSISTOR 2SC1740S-RT	
				Q1506	DELETED		
C1507	DELETED			*****			
C1510	1-164-004-11	CERAMIC CHIP 0.1MF 10% 50V		*A-1632-316-A	A BOARD, COMPLETE (KV-16WT1)		
C1511	1-164-004-11	CERAMIC CHIP 0.1MF 10% 50V			*****		
C1518	1-164-004-11	CERAMIC CHIP 0.1MF 10% 50V		*A-1632-312-A	A BOARD, COMPLETE (KV-16WT1A)		
C1530	1-137-133-11	FILM 0.15MF 5% 63V			*****		
C1532	1-130-776-00	FILM 0.47MF 5% 63V		*A-1632-317-A	A BOARD, COMPLETE (KV-16WT1K)		
C1535	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V			*****		
C1536	1-163-077-00	FILM 0.1MF 50% 50V		*A-1632-318-A	A BOARD, COMPLETE (KV-16WT1R)		
C1541	1-163-117-00	CERAMIC CHIP 100PF 5% 50V			*****		
C1542	1-216-960-91	METAL 43K 1% 0.6W		*A-1632-319-A	A BOARD, COMPLETE (KV-16WT1U)		
C1543	1-102-824-00	CERAMIC CHIP 470PF 5% 50V			*****		
		< CONNECTOR >		4-382-854-11	SCREW (M3X10), P, SW (+)		
CN1501	1-766-953-11	CONNECTOR BOARD TO BOARD 15P		< CAPACITOR >			
		< DIODE >		C009	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
D1505	8-719-991-33	DIODE 1SS133T-77		C012	1-163-031-11	CERAMIC CHIP 0.01MF 50V	
D1506	8-719-991-33	DIODE 1SS133T-77		C021	1-163-059-00	CERAMIC CHIP 0.01MF 10% 50V	
		< RESISTOR >		C023	1-163-059-00	CERAMIC CHIP 0.01MF 10% 50V	
R1501	1-216-296-91	METAL GLAZE 0 5% 1/8W		C025	1-126-952-11	ELECT 1000MF 20% 16V	
R1502	1-410-200-31	INDUCTOR CHIP 4.7UH		C028	1-164-005-11	CERAMIC CHIP 0.0047MF 10% 50V	
R1503	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W		C034	1-136-153-00	FILM 0.01MF 5% 50V	
R1504	1-216-029-00	METAL GLAZE 150 5% 1/10W		C036	1-164-005-11	CERAMIC CHIP 0.47MF 25V	
R1505	1-216-047-91	METAL GLAZE 820 5% 1/10W		C104	DELETED		
R1506	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W		C109	DELETED		
R1507	1-216-001-00	METAL GLAZE 10 5% 1/10W		C110	DELETED		
R1511	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W		C112	DELETED		
R1513	1-216-039-00	METAL GLAZE 390 5% 1/10W		C116	DELETED		
R1517	1-410-200-31	INDUCTOR CHIP 4.7UH		C120	1-126-925-11	ELECT 470MF 20% 10V	
R1522	DELETED			C131	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V (KV-16WT1K/16WT1R)	
R1523	1-216-234-00	METAL GLAZE 33K 5% 1/8W		C153	1-163-097-00	CERAMIC CHIP 15PF 5% 50V	
R1524	DELETED			C161	DELETED		
R1529	1-216-234-00	METAL GLAZE 33K 5% 1/8W		C164	DELETED		
R1533	1-216-295-91	CONDUCTOR, CHIP		C166	DELETED		
R1540	1-247-879-91	CARBON 100K 5% 1/4W		C167	DELETED		
R1541	1-247-879-91	CARBON 100K 5% 1/4W		C170	1-101-004-00	CERAMIC CHIP 0.01MF 10% 50V	
		< VARIABLE RESISTOR >		C303	1-163-005-11	CERAMIC CHIP 470PF 10% 50V	
RV1500	1-241-630-11	RES, ADJ, CARBON 10K		C314	1-163-077-00	CERAMIC CHIP 0.1MF 10% 25V	
				C318	DELETED		
				C322	1-163-101-00	CERAMIC CHIP 22PF 5% 50V	

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All resistors are in ohms
- F : nonflammable

The components identified by shading and marked **A** are critical for safety. Replace only with the part number specified.

Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified by shading and marked **▲** are critical for safety. Replace only with the part number specified.

Les composants identifiés par une trame et une marque **▲** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C327	1-163-005-11	CERAMIC CHIP 470PF	10% 50V	D412	8-719-109-97	DIODE RD6.8ESB2	
C332	1-216-295-91	CONDUCTOR, CHIP		D414	8-719-991-13	DIODE 1SS133T-77	
C333	DELETED			D613	8-719-109-89	DIODE RD5.6ESB2	
C334	DELETED			D614	8-719-109-89	DIODE RD5.6ESB2	
C335	DELETED			D803	8-719-945-80	DIODE ERC06-15STP11	
C336	DELETED			D804	DELETED		
C337	DELETED			D805	8-719-979-85	DIODE RGP15J-6040G23	
C338	DELETED			D806	8-719-300-33	DIODE RU2AM	
C339	DELETED			D808	8-719-921-83	DIODE MTZJ-T-77-12A	
C340	DELETED			D809	8-719-302-43	DIODE RGP10GPKG23	
C343	1-163-038-00	CERAMIC CHIP 0.1MF	25V			< FERRITE BEAD >	
C348	DELETED			FB801	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
C349	DELETED					< IC >	
C351	DELETED			IC801	8-759-103-93	IC LM393P	
C358	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V			< JACK/SOCKET >	
C404	1-164-346-11	CERAMIC CHIP 1MF	16V	J1401	1-563-500-11	JACK BLOCK, PIN (L TYPE) 2P	
C405	1-164-222-11	CERAMIC CHIP 0.22MF	25V			< COIL >	
C409	1-163-005-11	CERAMIC CHIP 470PF	10% 50V	L111	DELETED		
C416	DELETED			L401	1-408-609-41	INDUCTOR 33UH	
C418	DELETED			L602	1-408-609-41	INDUCTOR 33UH	
C425	1-165-319-11	CERAMIC CHIP 0.1MF	50V	L803	1-459-856-11	COIL, FERRITE	
C510	1-163-005-11	CERAMIC CHIP 470PF	10% 50V	L804	1-459-105-21	COIL (WITH CORE)	
C612	▲ 1-113-937-11	ELECT 0.0022MF	20% 250V			< TRANSISTOR >	
C613	▲ 1-113-937-11	ELECT 0.0022MF	20% 250V	Q101	DELETED		
C622	1-111-041-11	ELECT 0.001MF	20% 16V	Q102	DELETED		
C801	1-130-895-00	FILM 0.056MF	10% 200V	Q103	DELETED		
C803	1-136-597-11	FILM 0.89MF	5% 200V	Q109	DELETED		
C808	1-136-073-00	FILM 0.0073MF	3% 2KV	Q115	DELETED		
C812	1-163-059-91	CERAMIC CHIP 0.01MF	10% 50V	Q116	DELETED		
C814	1-106-367-00	MYLAR 0.01MF	10% 400V	Q307	DELETED		
C816	DELETED			Q308	8-729-901-01	TRANSISTOR DTC144EK (KV-16WT1U)	
C818	1-136-597-11	FILM 0.89MF	5% 200V	Q501	8-729-920-74	TRANSISTOR 2SC2412K-QR	
C821	1-126-968-11	ELECT 100MF	20% 50V	Q600	8-729-119-78	TRANSISTOR 2SC1740S-RT	
C825	DELETED			Q802	8-729-033-85	TRANSISTOR S2000N-16E305A	
C826	DELETED			Q804	8-729-202-03	TRANSISTOR 2SD1761-E	
C827	1-164-182-11	CERAMIC CHIP 0.003MF	10% 50V			< RESISTOR >	
C828	1-124-903-11	ELECT 1MF	20% 50V	JR013	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C830	1-126-967-11	ELECT 47MF	20% 50V	JR016	1-163-077-00	CERAMIC CHIP 0.1MF 10% 25V	
C835	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V	JR020	DELETED		
		< FILTER >		JR022	1-216-295-00	METAL GLAZE 0 5% 1/10W	
CF105	1-760-154-11	TRAP, CERAMIC (KV-16WT1U)		JR024	1-216-295-00	METAL GLAZE 0 5% 1/10W	
SWF102	DELETED			JR028	1-216-296-91	METAL GLAZE 0 5% 1/8W	
		< CONNECTOR >		JR030	1-216-296-91	METAL GLAZE 0 5% 1/8W	
CN301	* 1-766-956-11	CONNECTOR BOARD TO BOARD	15P	JR031	1-216-296-91	METAL GLAZE 0 5% 1/8W	
CN804	DELETED			JR034	1-216-296-91	METAL GLAZE 0 5% 1/8W	
		< DIODE >		R001	1-216-198-91	METAL GLAZE 1K 5% 1/8W	
D102	DELETED			R002	1-216-033-00	METAL GLAZE 220 5% 1/10W	
D104	DELETED			R012	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
D305	1-249-412-11	CARBON 390	5% 1/4W			1-216-073-00	METAL GLAZE 10K 5% 1/10W (KV-16WT1A)
D307	DELETED						(KV-16WT1/16WTK/16WT1R/16WT1U)
D308	DELETED			R034	1-249-429-11	CARBON 10K 5% 1/4W	
D309	DELETED			R048	1-216-025-91	METAL GLAZE 100 5% 1/10W	
D310	DELETED			R074	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
D311	DELETED						
D312	DELETED						
D313	DELETED						

KV-16WT1

A C U

The components identified by shading and marked A are critical for safety. Replace only with the part number specified.

Les composants identifiés par une trame et une marque A sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

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Table with columns: REF.NO., PART NO., DESCRIPTION, REMARK. Contains two columns of component data, including parts like METAL GLAZE, CARBON, RESISTOR, and TRANSFORMER.

The components identified by shading and marked ⚠ are critical for safety. Replace only with the part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



REMARK

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
		< FERRITE BEAD >					
FB1001	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH					
		< IC >					
IC1001	8-759-391-40	IC P87C750EBPN					
		< TRANSISTOR >					
Q1001	8-729-119-78	TRANSISTOR 2SC1740S-RT					
		< RESISTOR >					
R1001	1-249-417-11	CARBON	1K 5% 1/4W				
R1002	1-249-417-11	CARBON	1K 5% 1/4W				
R1003	1-249-417-11	CARBON	1K 5% 1/4W				
R1004	1-247-863-91	CARBON	22K 5% 1/4W				
R1005	1-247-807-31	CARBON	100 5% 1/4W				
R1011	1-247-807-31	CARBON	100 5% 1/4W				
R1016	1-249-399-11	CARBON	33 5% 1/4W				
R1017	1-249-482-11	CARBON	8.2K 5% 1/4W				
R1018	1-249-429-11	CARBON	10K 5% 1/4W				

< CRYSTAL >

X1001 1-578-774-11 VIBRATOR, CRYSTAL

MISCELLANEOUS *****

⚠ 1-776-860-11 CORD, POWER (WITH FILTER) 2.5A/250V (KV-16WT1U)

ACCESSORIES AND PACKING MATERIALS *****

1-417-151-11 MATCHING TRANSFORMER, ANTENNA
1-501-730-11 ANTENNA, TELESCOPIC

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TV & Display Products Div.

KV-16WT1



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